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CHETCO - GRAYBACK

PLANNING UNIT



Forest Service USDA
Pacific Northwest Region
Siskiyou National Forest

draft environmental statement


DEC 1978

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DRAFT ENVIRONMENTAL STATEMENT

USDA-FS-R6-DES-(Adm.) 79-2

CHETCO-GRAYBACK PLAN
JOSEPHINE AND CURRY COUNTIES, OREGON
DEL NORTE COUNTY, CALIFORNIA

Lead Agency:

USDA - Forest Service
Siskiyou National Forest
P.O. Box 440
Grants Pass, Oregon 97526

Responsible Official:

R.E. Worthington
Regional Forester
Pacific Northwest Region (6)

For further information contact:

John Millet
Watershed Staff
Siskiyou National Forest
P.O. Box 440
Grants Pass, Oregon 97526
(503-479-5301)

The Environmental Statement analyzes five alternatives pertaining to the land and resource management of the 464,712 acre Chetco-Grayback Planning Unit on the Siskiyou National Forest. The Statement identifies Alternative D as the Forest Service preferred alternative and discusses the rationale for its selection. It also discusses the estimated effects of implementing each alternative.

Date of Transmission to EPA: NOV 24 1978

Comments regarding this Environmental Statement should be sent to the Forest Supervisor, Siskiyou National Forest, P.O. Box 440, Grants Pass, Oregon, 97526, by February 1, 1979.

SUMMARY

CHETCO-GRAYBACK DRAFT ENVIRONMENTAL STATEMENT

USDA-FS-R6-DES-(Adm.) 79-2

Prepared in accordance with Section 102 (2)(c) of Public Law 91-190
The National Environmental Policy Act of 1969

Type of Action: Administrative

Responsible Federal Agency:

USDA - Forest Service
Siskiyou National Forest
P.O. Box 440
Grants Pass, Oregon 97526

Responsible Official:

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Grants Pass, Oregon 97526
(503-479-5301)

Date of Transmission to EPA and the Public: NOV 24 1978

Responses must be sent within 60 days of the above date to:

Forest Supervisor
Siskiyou National Forest
P.O. Box 440
Grants Pass, Oregon 97526

I. The proposed action consists of a land management plan for the 464,712 acre Chetco-Grayback Planning Unit on the Siskiyou National Forest. The Unit is located about 5 air-miles east of the coastal town of Brookings in Curry County, Oregon. The eastern part of the Unit is located around the Cave Junction and O'Brien area in Josephine County, Oregon. South of Cave Junction the Unit extends into Del Norte County, California.

Alternative D, the preferred alternative, recommends a balanced mix of land allocations designed to sustain a high level of timber harvest; to protect the qualities of the Illinois River which has been recommended for inclusion in the National Wild and Scenic River System; to provide Wilderness for recreation and other uses; to provide recreational opportunities; and to protect and manage the soil, water, fish, wildlife, timber, visual, and other resources. This alternative contains nine different land management allocations as follows:

Allocation	% of Unit
Management Area 1	76.1
Management Area 2	2.2
Management Area 4	1.0
Management Area 5	.1
Management Area 6	.9
Management Area 7	.3
Management Area 9	.3
Management Area 10	.1
Management Area 11	19.0
TOTAL	100.0

The purpose of this statement is to ensure that all resources, including the wilderness resource, is given appropriate consideration relative to their potential values. Current Forest Service policy requires Environmental Statements be filed before undertaking any development activities which would change the character of any of the inventoried roadless areas. Determining land management options and resource trade-offs are the decisions to be made through this environmental process.

This plan includes consideration of the guidelines set forth in the interim directions in FSM 1920 issued to implement the National Forest Management Act (PL 94-588) and is determined to be consistent with those guidelines. This plan will be in effect until it is reviewed and, if necessary, revised as soon as practicable under future final guidelines.

II. The Forest Service examined five alternatives for the Planning Unit. Although there are an unlimited number of possibilities, these alternatives were selected and evaluated because they represent a wide range of land management options. The general criteria used in the evaluation were existing resources, land capabilities, social and economic values, environmental impacts, public meeting, and an alternatives brochure.

Alternative A: Under this alternative, no action would be taken to develop a comprehensive land management plan. Approximately 169,235 acres of selected roadless area would be placed in a deferred allocation with no management decision being made at the present time.

Alternative B: All inventoried roadless areas allocation are recommended for wilderness allocation.

Alternative C: The area southeast of the present wilderness would be designated as dispersed recreation area where harvest activities would be modified. Also, two dispersed recreation areas would be established where primitive conditions would be maintained.

Alternative D: This alternative is a commodity-amenity blend. It provides for a variety of uses and activities. Remote, near natural lands would be maintained along with a high level production of wood fiber. This alternative has been selected as the preferred alternative. It provides adequate protection to all available resources.

Alternative E: This alternative emphasizes commodity production. Present administrative allocations are maintained.

III. The preferred alternative, like any land management allocation, will result in both favorable and adverse environmental effects.

1. Timber harvest will decrease slightly from the current level.

2. Dispersed recreation (trail-related) will decline as management activities increase in the undeveloped roadless areas. Developed and dispersed (road-related) recreation will increase.

3. A temporary sediment increase will result immediately following a development activity.

4. Anadromous fish production may decline slightly over the conversion period.

5. Big game species should increase with the improved habitat while cavity-nesters and old-growth dependent species will decline as the old-growth is reduced.

6. Wildlife harassment and poaching opportunities will increase with increased access.

7. Threatened and endangered species will be adequately protected.

8. Job opportunities will be maintained over the long-term.

IV. Initial distribution of this DES will be made to a number of individuals and to the agencies, organizations and individuals as shown below. Copies will also be made available for public review at many libraries and at Siskiyou National Forest, Supervisor and Ranger District offices. In addition, everyone for this Planning Unit who is not also on the initial distribution list will be sent a notice that the DES is available.

Federal

Bonneville Power Administration
Department of Agriculture
Department of Commerce
Department of Defense
Department of Health, Education, and Welfare
Department of the Interior
Department of Labor
Environmental Protection Agency, Region 10
Federal Energy Administration
Federal Highway Administration
Federal Highway Commission
National Aeronautics and Space Administration
Pacific Northwest River Basins Commission
Regional Federal Highway Administration
Water Resources Council

State

Local Government Relations Division, Executive Department

Public Officials

County Commissioners, Coos, Curry, Douglas, and Josephine Counties
Governor, State of Oregon (through State Clearinghouse)
Subcommittee on Public Lands, House Committee on Interior and Insular Affairs
U.S. Congressman, 4th District
U.S. Senators from Oregon

Organizations

American Institute of Biological Sciences
Brookings-Harbor Chamber of Commerce
Cascade Holestic Economic Consultants
Coos, Curry, Douglas Economic Improvement Association
College of Forest Resource, University of Washington
Corvallis Center for Environmental Service, Oregon State University
Denver Public Library
Department of Fisheries and Wildlife, Oregon State University
E.S. Jackson Library, Central Oregon Community College
Federation of Western Outdoor Clubs
Forest Resources Library, University of Washington
Friends of the Earth
Gold Beach Chamber of Commerce
Grants Pass Chamber of Commerce
Industrial Forestry Association
Izack Walton League
Library, Colorado State University

Mazamas
National Wildlife Federation
Northwest Mining Association
Northwest Timber Association
Oregon Council of Rock and Mineral Clubs
Oregon Environmental Council
Oregon Equestrian Trails Association
Oregon Student Public Interest Research Group
Oregon Wildlife Federation
Pacific Northwest 4-Wheel Drive Association
Penrose Memorial Library, Whitman College
School of Forestry, Oregon State University
Sierra Club
Sierra Club Legal Defense Fund
Southern Oregon Timber Industry Association
Survival Center, University of Oregon
Trails Club of Oregon
Trout Unlimited
Washington State Sportmen's Council
Washington State Horsemen, Inc.
Western Forestry and Conservation Associaton
Western Forest Industry Association
Western Wood Products Association
The Wilderness Society
Wildlife Management Institute
The Wildlife Society

Copies of this Draft Environmental Statement will be available for review at many public libraries in southwestern Oregon and at the Forest Service offices listed below:

Office of the Chief
USDA, Forest Service
South Agriculture Bldg, Room 3230
12th Street and Indenpendence Ave., S.W.
Washington, D.C. 20250

Regional Office, Forest Service
319 S.W. Pine Street
Portland, Oregon 97208

Supervisor's Office
Siskiyou National Forest
1504 N.W. 6th Street
Grants Pass, Oregon 97526

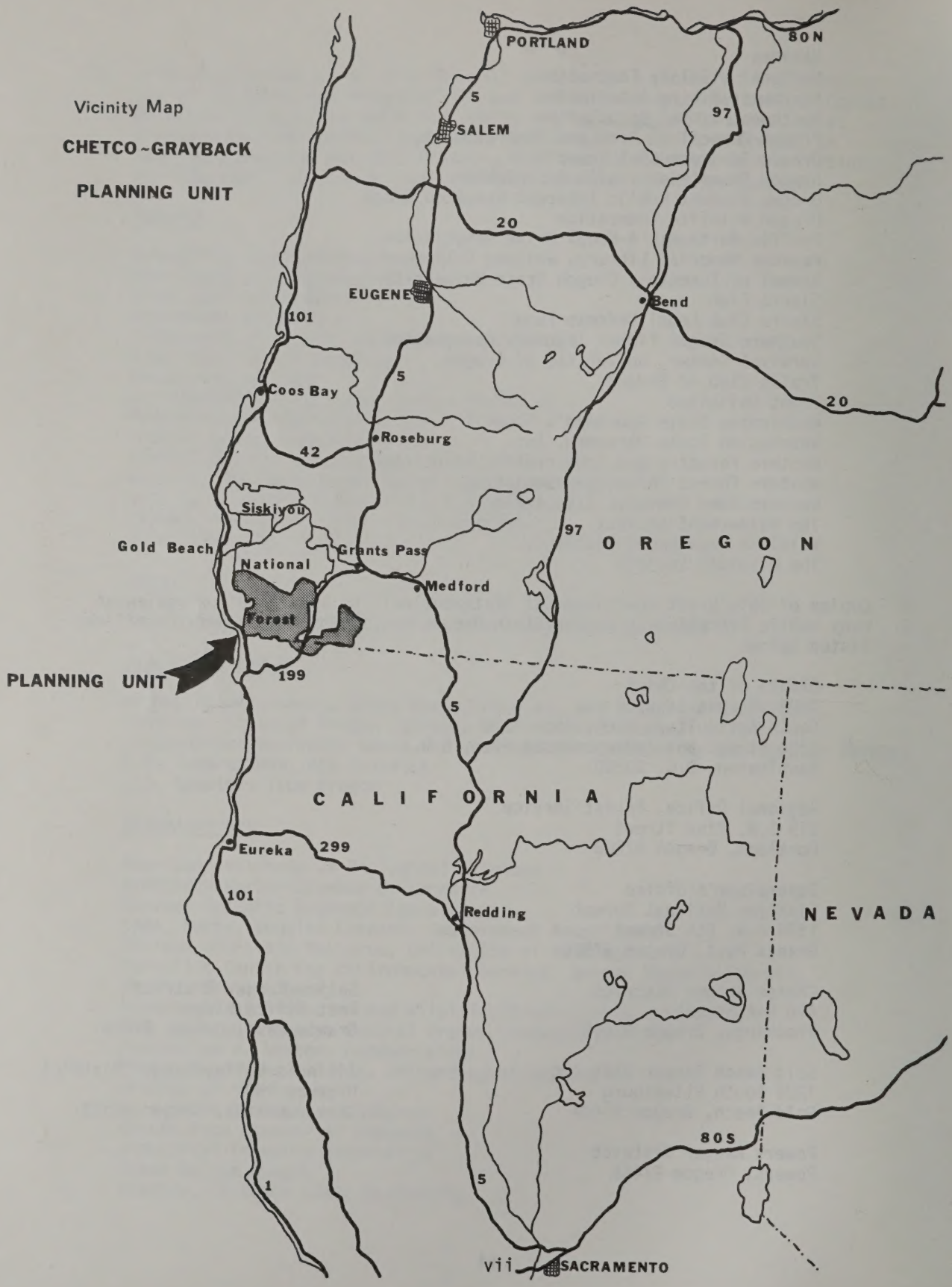
Chetco Ranger District
446 Oak Street
Brookings, Oregon 97415

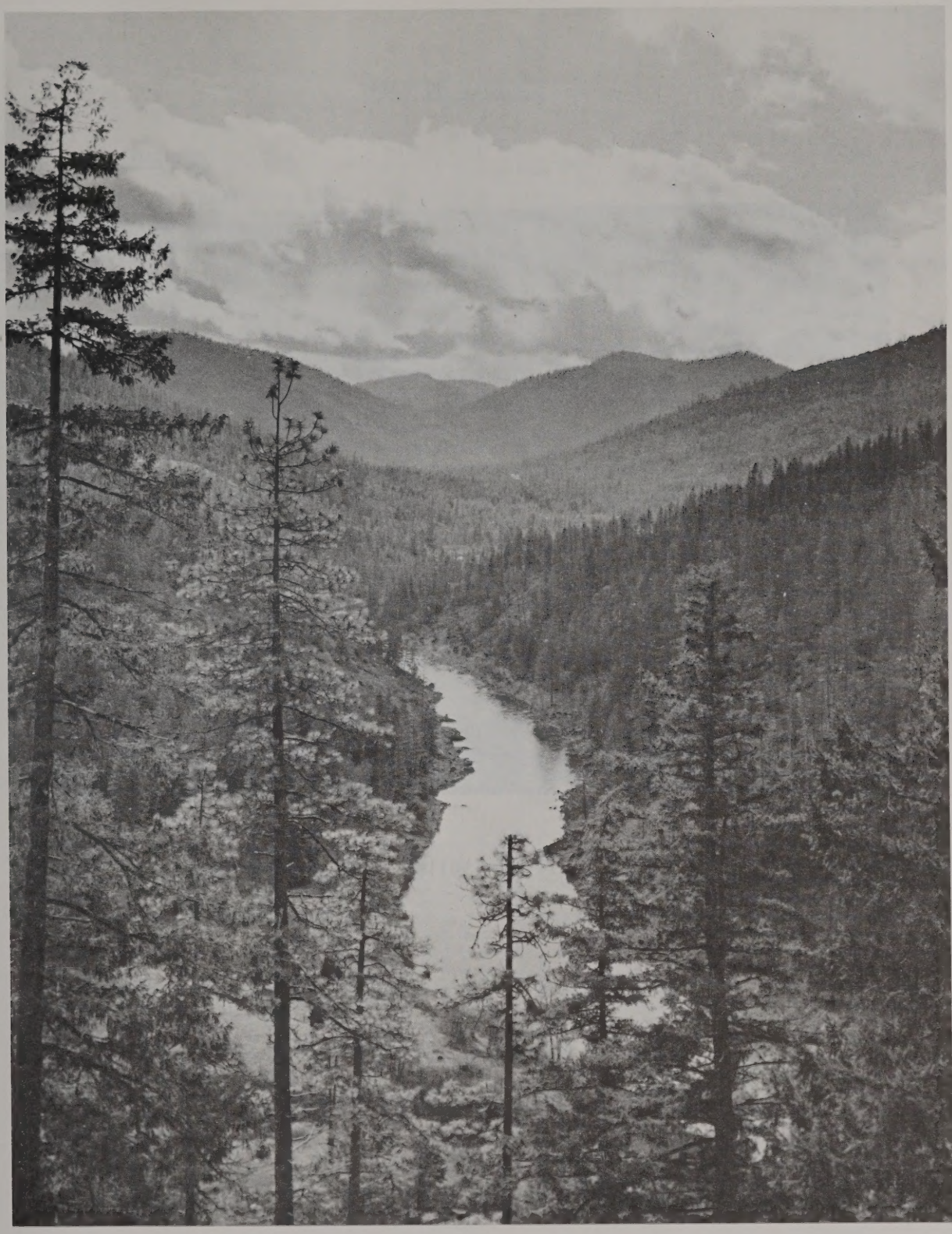
Gold Beach Ranger District
1225 South Ellensburg
Gold Beach, Oregon 97444

Powers Ranger District
Powers, Oregon 97466

Galice Ranger District
Post Office Bldg
Grants Pass, Oregon 97526

Illinois Valley Ranger District
Highway 199
Cave Junction, Oregon 97523


Vicinity Map
CHETCO~GRAYBACK
PLANNING UNIT
PORTLAND
80N
5
SALEM
97
20
EUGENE
Bend
101
5
Coos Bay
20
Roseburg
42
Siskiyou
Gold Beach
National
Grants Pass
97
OREGON
Medford
Forest
PLANNING UNIT
199
5
CALIFORNIA
Eureka
299
101
Redding
NEVADA
80S
1
5
vii
SACRAMENTO





Illinois Valley

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Brookings Harbor at Mouth of Chetco River

I. INTRODUCTION

During the late 1800's, it became alarmingly apparent that the natural resources in this country were being uncontrollably exploited. The conservation movement had its beginning during this period and their efforts contributed significantly to the establishment of national forests and park systems. Management guidelines established by the Act of June 4, 1897 provided for improvement and protection of forests, to ensure favorable water flows, and to furnish a continuous supply of timber.

During the ensuing years the forests were managed under the concept of the greatest good to the greatest number of people over the long run. Congress passed the Multiple Use - Sustained Yield Act in 1960, which provided that the national forests be administered for recreation, range, timber, watershed, and wildlife and fish. Early conservation leaders had previously recognized wilderness as a resource and made provisions for retaining some land of wilderness character. This Act provided for maintenance and establishment of this type land. Congress passed legislation in 1964, to manage this administratively classified land as wilderness and made it a part of the National Wilderness Preservation System.

In 1969 the National Environmental Policy Act (NEPA) was passed to ensure that all resources, including the wilderness resource, would be given appropriate consideration relative to their potential values. In response to this act, and other legislation, during the early part of this decade (70's) the Forest Service inventoried all of the roadless or undeveloped areas of 5,000 acres or more in the National Forest System. Also included were smaller areas adjoining existing wilderness and primitive areas. This operation was referred to as the RARE (Roadless Area Review and Evaluation) process and was the first phase in selecting high quality areas to be studied for inclusion in the National Wilderness Preservation System. NEPA also required environmental statements written on all proposed major federal actions affecting the environment. Current Forest Service policy requires Environmental Statements be filed before undertaking any development activities, such as timber harvest or road building, which would change the wilderness character of any of the areas included in the Roadless Area Inventory. A Final Environmental Statement covering these selected study areas was filed with the Council on Environmental Quality in October 1973.

Review of RARE I, as it is now referred to, led to criticism that it did not direct sufficient attention to National Grasslands or to National Forests in the East. Some significant areas in the West also were overlooked. A second inventory, RARE II, was begun in 1976 to correct these deficiencies.

RARE II developed a comprehensive inventory in maps and files of all areas in the National Forest System that meet minimum criteria as wilderness without considering whether the areas should be classified as wilderness or not. This inventory was made available to the public at 227 workshops across the nation conducted in the summer of 1977 and attended by about 17,000 individuals.

The public was encouraged to review the initial inventory. Recommendations for additions and deletions to the inventory were accepted at the workshops and received by mail. This public response was reviewed and the initial inventory was adjusted.

The inventoried areas were evaluated and analyzed for alternative ways to round out the National Wilderness Preservation System for lands administered by the Forest Service. This analysis consisted of an assessment of environmental, social, and economic effects of various alternatives as well as an evaluation of the "wilderness attributes" of the inventoried areas.

The environmental statement process (in progress) will be used to analyze alternatives, allow for public comment, and provide the basis for final decisions on the allocation of the land areas.

Executive Order 11988 and 11990 signed May 24, 1977 supplements NEPA by establishing new general policy and requirements for floodplain management and wetland protection.

The basic framework for Forest Service Land Management Planning is provided in the National Forest Management Act of 1976 (PL 94-588), the Forest and Rangeland Renewable Resources Planning Act of 1974 (RPA) (PL 93-378) as amended, and other enabling legislation and implementing policies. Although Public Laws 94-588 and 93-378 are recent, land management planning on the National Forests is not new. It has evolved from early-day District plans, through a multiple-use plan phase, to the present.

Land management planning activities exist at all levels. Increased population, income and economic activity has rapidly increased the demand for all forestland, rangeland, and inland water products. The Forest and Rangeland Renewable Resources Planning Act of 1974 (RPA) directed the Secretary of Agriculture to develop a longrange program for the Nation's renewable resources that will assure an adequate supply of forest and range resources in the future, while maintaining the integrity and quality of the environment. This national program will be assessed and updated periodically.

The Forest Service Pacific Northwest Region Six has six planning areas which are geographic areas with similar physical economic and social characteristics. Area guides, which identify resource inventories and establishes management direction, are developed and used to assess the economic, environmental and social relationship of the National Forest to the Area. The guides are used to assign program and planning priorities at a Regional level.

The areas are divided into planning units of varied sizes, based on its manageability and social, political, and economical considerations. It provides land management allocations and other information needed for planning, budgeting, manpower, technical support, and other management activities. These unit plans are coordinated with the state planning goals, local counties and other agencies.

Activity or project plans are the first step in implementing the objectives and direction resulting from the unit plan. Resource Management planning such as a timber management plan, determines investment levels and resource outputs which will be produced by unit plan allocations. Resource inventories, assumptions and analysis used in the unit plan can be monitored at this level. A periodic review of new information resulting from the activity level makes it possible to analyze and update the plan where necessary.

This plan includes consideration of the guidelines set forth in the interim directions in FSM 1900 issued to implement the National Forest Management Act (PL 94-588) and is determined to be consistent with those guidelines. This plan will be in effect until it is reviewed and, if necessary, revised as soon as practicable under future final guidelines.

Eight basic steps will be used to develop the Chetco-Grayback Planning Unit Environmental Statement:

1. Data gathering
2. Public meeting
3. Alternatives brochure
*4. Draft Environmental Statement
5. Final Environmental Statement
6. Land Use Allocation Decision
7. Implementation
8. Feedback

*Currently at this step in the process.

II. AFFECTED ENVIRONMENT

A. Geographical Conditions

The Chetco-Grayback Planning Unit is located in the sourthern part of the Siskiyou National Forest in Southwestern Oregon. This Planning Unit extends from Gold Beach, Oregon south to the California state line. The west boundary is approximately six miles from the coast and the Unit continues east to Illinois Valley and the western slopes of the Siskiyou Mountains. Also, this Unit includes the headwater of the Illinois River in Northern California. The legal land description includes Townships 37, 38, 39, 40, and 41 South, and Ranges 5, 6, 7, 8, 9, 10, 11, 12, and 13 West, Williamette Meridian, in Oregon; and Townships 17, 18, and 19 North, Ranges 3, 4, 5, and 6 East, Humboldt Meridian, in California. The Planning Unit lies in Del Norte County in California and Curry and Josephine counties in Oregon. Figure A-1 shows the boundaries and location of this Planning Unit.

There are 489,437 acres within the boundaries of this Unit, of which 24,725 acres are privately owned and not subject to the planning process. Parts of five major coastal streams flow from this Planning Unit: Chetco, Illinois, Pistol, Smith and Winchuck. The Illinois River has been recommended for inclusion to the National Wild and Scenic River System.

The Unit contains a number of different plants and animals. A few Special Interest Areas and the Kalmiopsis Wilderness have been reserved for their protection. Wheeler Creek Research Natural Area, and Babyfoot Lake Unusual Interest Area-Botnical, are included. Several other proposed areas have been selected for a comprehensive study. The Oregon Caves National Monument, administered by the National Park Service, is another feature of prominance near Cave Junction. Almost one half of the Kalmiopsis Wilderness (88,675 acres) is located in the north-central part of this Unit.

The elevation ranges from 100 feet near the coast to over 6,000 feet in California. Moving east from the coast the topography rises to approximately 5,000 feet at Pearsoll Peak, settles down to about 1,300 feet in Illinois Valley and rises again to 6,000 feet on the western slopes of the Siskiyou Mountain range. Although the topography varies a great deal, some general descriptions can be applied to the Unit. The Kalmiopsis Wilderness is sparsely vegetated, has sharp ridges and steep sideslopes. The general surface configuration of the remaining area consists of densely vegetated flat ridgetops and convex sideslopes.

The average annual precipitation on this Unit varies from 50 inches near Cave Junction to 150 inches or more on the Upper Chetco River. Heavy precipitation is produced because of the west to east movement of the air masses over the Pacific Ocean before moving up into the mountains. The loss of moisture as the marine air moves inland over the mountains results in lower rainfall on the inland valleys. Heavy snowfall occurs in the higher elevations on the eastern boundary of the Unit and some years it remains until early May. Snow is of little significance near the coast. The prevailing winds are from the southwest during the winter months. Wind velocity has been recorded at over 100 miles per hour along the coast; however, winds over the inland valleys rarely, if ever, attain that velocity. The influence of the marine air keeps the temperature very moderate in this Unit. Extreme temperatures of 90 degrees F or higher or 0 degrees F or lower are practically unheard of on the Coast. Temperatures in the inland valleys range somewhere between 15 degrees F to 105 degrees F. Average temperature for the whole Unit is 53 degrees F.



Winter Drapery on Sucker Creek

General Statistics

National Forestland	464,712
Other Ownerships (private)	24,725
Total Gross Planning Unit Acreage	489,437
Kalmiopsis Wilderness (Partial)	88,675
Babyfoot Lake Unusual Interest - Botanical	350
Wheeler Creek Research Natural Area	334
Proposed Hoover Gulch Research Natural Area	under study
Proposed Lemmingworth Gulch Research Natural Area	under study
Illinois River Scenic Study Section	5,597
Non-Selected Inventoried Roadless Area	171,058
Elevation Range	100-6,372
Average Side Slope	30-60%
Average Annual Precipitation Range	50-150+ degrees
Mean Winter Temperature	43 degrees
Mean Summer Temperature	64 degrees
Frost Free Growing Season	120-300 days
Total Merchantable Timber Volume	4,535 MMBF
Roads:	
Miles existing (approx.)	790 miles
% of Planned System	58%
Trails:	
System Trails (approx.)	270 miles
% of Planned System	75%
Abandoned and/or Uninventoried	many miles
Streams and Rivers:	
Perennial (approx.)	798 miles
Intermittent (approx.)	1,506 miles
Class I	178 miles
Class II	202 miles

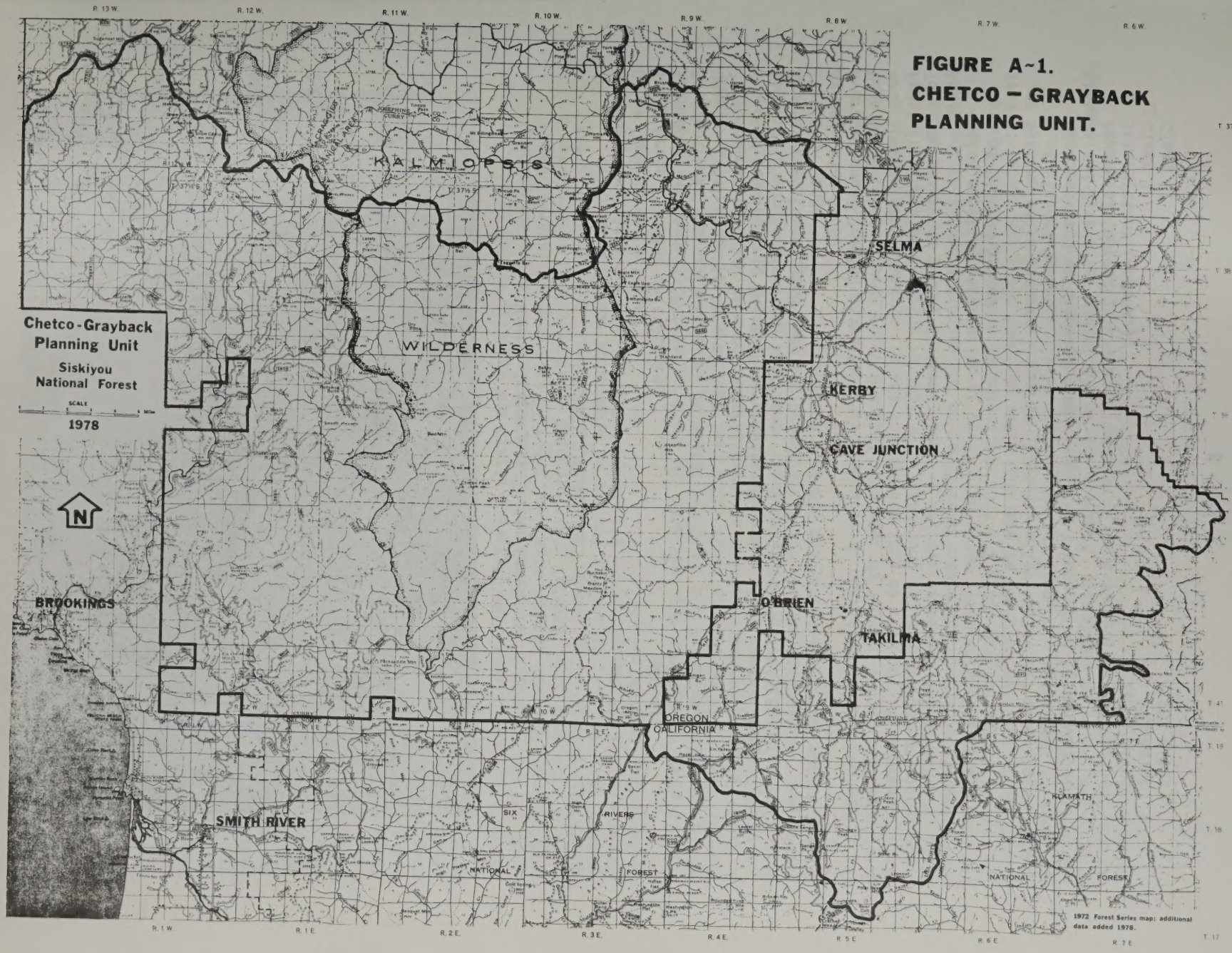


FIGURE A-1.
CHETCO – GRAYBACK PLANNING UNIT.

B. History and Cultural Resources

The Chetco-Grayback Planning Unit in southwestern Oregon is a very interesting and exciting region of the United States. In the last 130 years most of man's activities, which included exploration, fur trapping, mining, settlement by immigrants, Indian wars, stage coaches, and the coming of the railroads, was recorded for posterity.

The first known inhabitants of this area were the Native American Indian. It is believed that they occupied this area for approximately 5,000 years. 1/ The tribes of this Unit were called Tolowa, Chetco, Tututni, Shasta Costa, and Takelmas. The latter, sometimes referred to as the Rogues, lived in the Rogue and Illinois Valley area. They did not produce any cultivated crops but depended on their hunting skills to survive. The other four tribes lived on the coast from northern California to the southern Coos County line. They existed on wild vegetation, fish and other marine life. The Indian population was small and dispersed among many isolated, secluded mountain valleys or near coastal estuaries. According to ethnographic and historic sources, the open, flat valley floors were the location of villages and intensive campsites. The surrounding hills with their steep and frequently brushy ridges were considered special use areas. Although there is little information on the tribes of the area, this pattern appears common throughout southwestern Oregon. 2/ Figure B-1 shows the tribal boundaries on this Planning Unit.

Previous archeological surveys in southwest Oregon indicate that the most common use and settlement patterns on the area consentrated the activities of the aboriginal people in the following area: 1) stream margins; 2) stream confluences; 3) margins of the seashore; open meadows; 5) small meadows on high ridges; 6) caves or cliff bases; 7) waterfalls and fisheries in streams, and; 8) natural trails.

These same sources indicate several potential cultural resource types of archeological sites in this unit: 1) house pit village sites usually found near streams or rivers; 2) intensively occupied campsites on terraces above permanent streams or rivers; 3) small campsites adjacent to springs or small intermittent or permanent streams; 4) specialized rock structures on ridge tops; 5) rockshelters; 6) knapping sites; 7) food procurement sites; and 8) spirit quest sites. Known sites along the Illinois River below Deer Creek are believed to be Shasta Costa settlements of the typical coast Athabaskan group.

Walling reports that the first exploration of the area by a white man occurred in 1792 by an English navigator called Captain George Vancouver. 3/ Although the Spanish explorers had sailed the Oregon coast off Curry County since the 1500's, they had landed further north on the Umpqua River and had not investigated the Curry County shores. Probably the first immigrants from California to Oregon along the coast was fur trapper Jedediah Smith. In 1828 his party of 17 men had been ordered by the Spanish to get out of California and he elected to travel the coast route which was essentially untraveled except for Indian and animal paths or ocean beaches. During the journey Indians attacked him in the night and only three escaped to Fort Vancouver.

1/ Mack, Joanne M., 1975. Archeological Survey of the Leuizenger Wood Tract Josephine County, Oregon.
2/ Ibid.
3/ Walling, A.G., 1884. History of Southern Oregon, Comprising Jackson, Josephine, Douglas, Curry and Coos Counties. Portland, Oregon.

During 1827, Peter Ogden led a party of Hudson Bay Company trappers into the Rogue River area near Grants Pass. Company records indicate that 15 brigades of trappers passed through the Rogue Valley between the years of 1825 and 1843. 1/ In the years prior to 1851 many gold miners passed through the Rogue Valley and the Planning Unit on their way to the rich gold strikes in California. In 1850 the first gold was discovered on Josephine Creek by a man named Rollins. It is credited with being the first gold mining in the State of Oregon. 2/ This strike marked the beginning of the settlement of what is now Josephine County. The county was later named after Rollins' daughter. Many mining settlements were established near the more significant strikes. Little remains of the two town sites on Sucker Creek. The Indians burned the first one at the mouth of Yeager Creek in 1855. A new town was built in 1856 at the mouth of Bolan Creek after the Indian war was over. As the mineral disappeared so did the town.

Other early communities that were known to exist on the Planning Unit were Brown City (T. 41 S., R. 8 W., Sec. 2) located on Page Creek, Grass Flat which was located three miles south of Browntown and Sebastopol or Canyon City on Canyon Creek which is a tributary of Josephine Creek. O'Brien, Waldo, Browntown, Allentown, Tigertown and Takilma, which were located adjacent to the Planning Unit, slowly disappeared as the minerals were exhausted or became uneconomical to work. On the western portion of the Unit, the mouth of the Chetco River was first settled in 1853.

The Indians in the area objected to the coming of the white man and let them know they were not welcome in their territory; however, animosities were not aroused until the immigrants began settling the sites (canoe landings, dwelling sites, stream crossings) used for generations by the Indians. The Indians living in this area were much feared by the white man because they were more savage and warlike than any other southern Oregon tribe. Murder, massacres, and battles occurred after the white man began to settle the area and lasted until the Battle of Big Meadow in 1856. The Indians were rounded up and sent to the reservations at Grand Ronde and Siletz.

The settlers and miners were dependent on Crescent City, California for all their supplies which were hauled in by packtrain. By 1860 a wagon road was opened to this port. Eventually there were four routes to Crescent City. Parts of the Wimer Road which traverses the Unit still exist today. The stone corral at the foot of Oregon Mountain and Baine Station at the top of the mountain were established as relay stations for fresh horses and new drivers. The railroad arrived in Grants Pass in 1883 and the wagon supply lines were no longer needed. Surveys for a railroad never materialized across the Planning Unit. At Grants Pass it was terminated at Waters Creek, and from Crescent City it ended at Smith River. The line, now abandoned, was eventually extended to Brookings, Oregon but this was for logging purposes and not to connect Josephine County, Oregon with Del Norte County, California.

The Oregon Caves were discovered in 1873 by Elijah Davidson. 3/ As the story goes, Elijah was deer hunting in the area and his dog cornered a bear in the cave. The Oregon Caves became a National Monument by President Taft's proclamation dated July 12, 1909.

1/ Sutton, Jack, 1959. The Pictorial History of Southern Oregon and Northern California.
2/ U.S. Geological Survey, 1969. Mineral and Water Resources of Oregon, Bulletin 64.
3/ Grants Pass Courier, April 13, 1935. Golden Anniversary Edition.

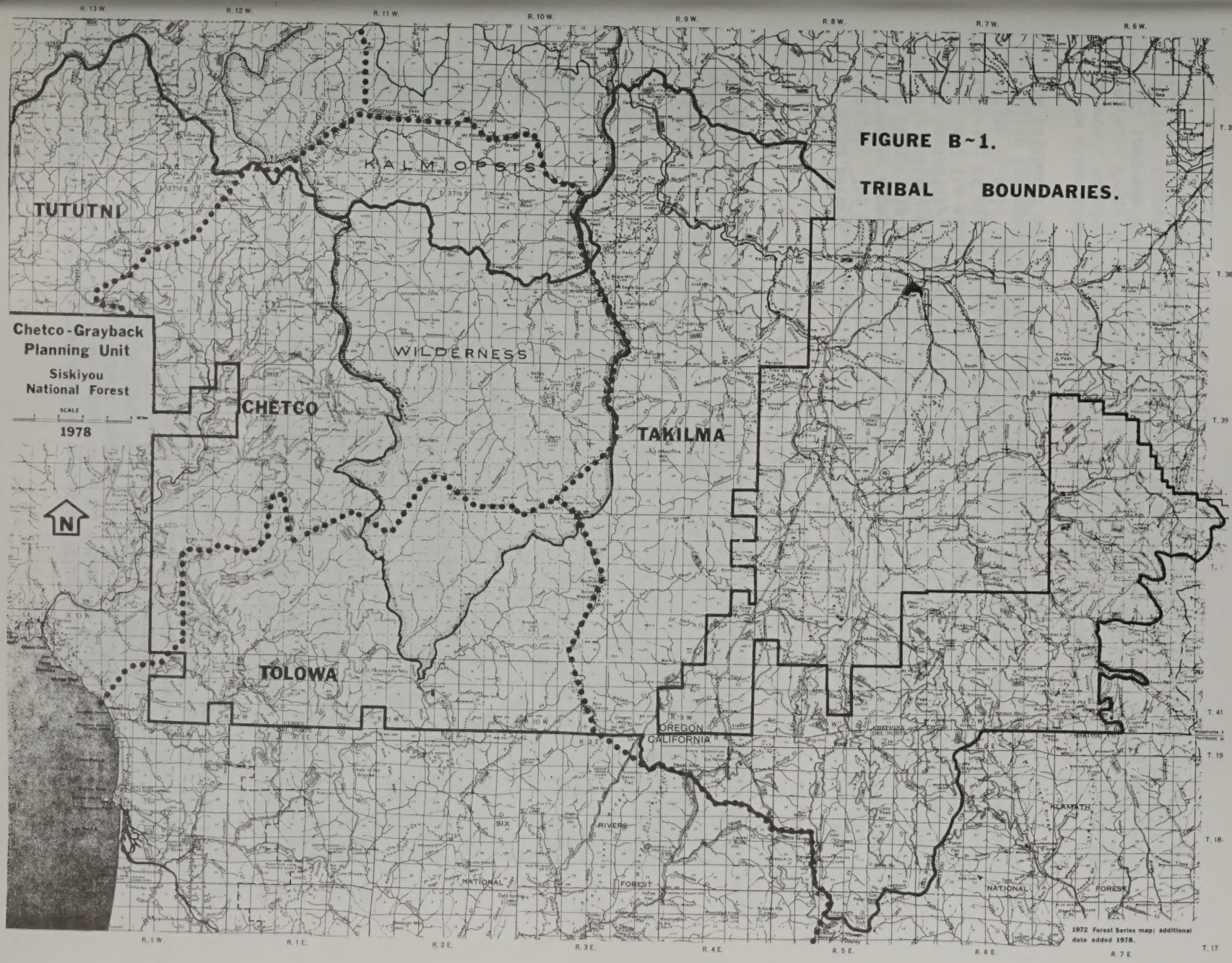
The Siskiyou National Forest Reserve was established in October 1906; however, it was not a popular decision in either Curry or Josephine County where the public land had never had any management regulations. Ranger Stations were established on this Planning Unit at Page Creek on what is now Illinois Valley District, and at Westmoore on the Winchuck River a short distance downstream from Bear Creek. This was headquarters for the Chetco District until it was moved to Brookings in 1926. Management activities during this period were centered around controlling fires, boundary surveys, inventories, trail and telephone line construction and maintenance.



Pack Train on Trail to Oregon Caves

As noted before, the people of the area were against any forest reserve or regulations. The miners burned the area to make it easier to prospect, ranchers burned to remove the brush so that grass would grow. In spite of the efforts of the Rangers to control and regulate the burning, it continued through most of the early history of the forest. As an indication of the problem in 1917 there were 173 incindiary, 6 brush burning, and 28 camper's fires. Unfortunately this does not tell the story for one District Ranger mentioned that many large fires in the interior of his District were burning low value areas and he elected to take no action at all. Written reports indicate that some of these fires burned uncontrolled for weeks and even months. These fires are undoubtedly responsible for the patchwork array of timber types on the Forest today.

A few minor timber sales were made in 1910 to mining companies on this Unit; however, it wasn't until around 1917 that a significant amount of timber was sold on Jacks Creek to the California and Oregon Lumber Company. It wasn't until about 1922 that the first formal timber management plan was approved by the Washington Office. Comparatively, only small amounts of timber were cut until the mid or late 50's when the demand for lumber increased rapidly. Timber sale revenue built


FIGURE B~1.
TRIBAL BOUNDARIES.
TUTUTNI
KALMIOPSIS
WILDERNESS
CHETCO
TAKILMA
TOLOWA
Chetco-Grayback
Planning Unit
Siskiyou
National Forest
SCALE
1978
N
OREGON
CALIFORNIA
SIX
RIVERS
NATIONAL
FOREST
KLAMATH
NATIONAL
FOREST
1972 Forest Series map; additional
data added 1978.

most of the access roads on the Forest that exist today. Since the Siskiyou National Forest has steep topography and unstable soil conditions it made an ideal area to analyze and study the use of helicopters for logging. The Grayback Skylift Helicopter Sale, dated June 30, 1971, was one of the first sales in Region 6 and in the United States designed for helicopter yarding.

On September 9, 1942, during World War II, the Japanese dropped a bomb near Wheeler Creek (T. 40 S., R. 12 W., Section 22) southeast of Mt. Emily in southwestern Oregon. The seaplane which was launched from a submarine dropped an incindiary bomb that started a small fire. The Japanese planned to set the forest on fire but the blaze was quickly controlled.

Other sites of possible historical and/or archeological interest are listed in the Appendix. This information was obtained from various Forest Service employees and others knowledgeable about specific sites. Additions to the current inventory will be made on a continuing basis as information from project planning and from other resources becomes available.

Although the nature and distribution of many historic and prehistoric sites are unknown today, future plans should remedy some of our inventory deficiencies. The Siskiyou National Forest has contracted with Stephen Dow Beckham, Lewis & Clark College, Portland, Oregon, to do a forest cultural resource overview; the termination date is September 30, 1978.

The project planning process for any ground-disturbing activities will include an on-the-ground inventory of cultural resource sites, districts, object, and structures, as required by Executive Order 11593. Compliance with 36CFR800 procedures will be documented in the project Environmental Analysis Report (EAR) or Environmental Statement (ES).

In compliance with Section 106 of the National Historic Preservation Act of 1966, the National Register of Historic Places as listed in the May 2, 1978 issue of the Federal Register was consulted. (Later copies of the Federal Register were also consulted to consider updates on that list.) It was determined that no National Register properties are affected by the proposed action. Indeed, no National Register properties or recommended additions are within the Unit boundaries. Further, the proposed action will serve to maintain the opportunity for discovery of any sites, if any exist.

The Oregon and California State Historical Preservation Officers have been consulted concerning the possibility of any historical properties in the Unit and the policies relating to ground-disturbing activities. Copies of the return correspondence can be found in the Appendix.

C. Socio-Economic

The area of substantial socio-economic influences for the Planning Unit includes both Curry and Josephine counties, Oregon. Nearly 93% of the Unit lies within these two counties and the Unit provides substantial benefits to each. Although more than 7% of the Unit, or 33,604 acres, is within the boundaries of Del Norte County, California, many of the benefits derived from these lands are enjoyed by Josephine County, Oregon. For example, virtually all of the timber harvested on the California land is hauled to, and processed in Josephine County; however, Del Norte County does receive the payments in lieu of taxes on the Siskiyou National Forestland in that county.

Forestlands are basic to the economy in each county and to the life styles of the residents in each county. The dominance of the forest resource can be seen in the fact that forest land accounts for approximately 94% of the land in Curry and Josephine counties.

Table C-1 shows that publicly-owned land accounts for a high proportion of the land in both Josephine and Curry counties and throughout Northern California.

Table C-1. Land Ownership in Curry and Josephine Counties and Northern California (%) 1/ 2/ 3/

Ownership	Curry	Josephine	Northern California 4/
Federal Government	65%	68%	44%
Forest Service	(59%)	(39%)	(35%)
Bureau of Land Management	(6%)	(29%)	(7%)
Other	(5/)	(5/)	(2%)
State Government	1%	1%	2%
Local Government	5/	5/	5/
Private	34%	30%	54%
Total	100%	100%	100%

1/ Siskiyou National Forest.
2/ Oregon State University Extension Service, 1973. Resource Atlas: Josephine County.
3/ Oregon State University Extension Service, 1973. Resource Atlas: Curry County.
4/ Statistics for entire Northern California Planning Area of which Del Norte County is a part. (Source: Northern California Planning Area Guide, U.S. Forest Service.)
5/ Less than 1%.

Population data in Table C-2 shows recent population levels, growth trends, and population densities for the three counties, two states, and the entire United States. These statistics indicate that the two coastal counties, Curry and Del Norte, have low population densities and very low to negative population growth rates. In contrast, Josephine County has a higher population density and its rapid population growth is nearly 3½ times the rate for the entire United States.

Table C-2. Population Estimates for Curry and Josephine Counties, Oregon, and Del Norte County, California. 1/ 2/ 3/

Area	1960	1970	1975 4/	6/1/77	Percentage Change 1960-1977 4/	Population Density (Persons/Sq Mile 2/) 1975 4/
Curry	13,983	13,006	14,100	14,500	3.7	9.0
Josephine	29,917	35,476	45,600	50,900	70.1	30.0
Del Norte	17,771	14,580	15,700		(-)11.7	15.7
Oregon 5/	1,769	2,091	2,299	2,396	35.4	24.0
California 5/	15,717	19,958	20,933		33.1	133.9
United States 5/	180,671	204,879	214,000 6/		18.4	59.2

1/ Source: U.S. Bureau of Census Reports for years indicated.
2/ Source: Center for Population Research and Census. Population Estimates of Counties and Incorporated Cities of Oregon. Portland State University.
3/ Oregon State University Extension Service, 1973. Resource Atlas for the counties indicated.
4/ 1974 estimates for Del Norte County and California.
5/ Thousands.
6/ Approximate.

Table C-3 indicates that the population distribution in the three counties is much more rural and much less urban in character than national and state populations. This is particularly true of the two coastal counties.

Table C-3. Percent of Population Living in Urban and Rural Areas, 1970. 1/

Area	% Urban	% Rural (Non-Farm)	% Rural (Farm)
Curry	20.9	69.7	9.4
Josephine	52.2	41.4	6.4
Del Norte	38.9	59.0	2.1
Oregon	67.1	26.5	6.4
California	90.9	8.2	0.9
United States	73.5	22.4	4.1

1/ Source: U.S. Bureau of Census, 1972. General Social and Economic Characteristics, 1970 - Oregon.

Racially, the three counties have a very high percentage of Caucasians in the population. Blacks, Spanish-speaking people, American Indians, and other minority groups account for only 1% of the population in Curry and Josephine Counties and about 6% of the population in Del Norte County. 1/ 2/ 3/

Table C-4 shows median income and the percentage of families below the low income level in the three counties, in the two states, and in the entire United States. The figures indicate that median income averages in the counties range from 78% to 93% of the U.S. average and that the percentage of families below the low income level is generally higher than national and state averages.

Table C-4. Family Incomes, 1969, 1976. 1/ 2/

Area	Median Income ($) 1969	Median Income ($) 1976	% Less Than $7,000 1969	% Less Than $7,000 1976	% Below the Low Income Level
Curry	8,543	11,936	36.7	41.4	11.6
Josephine	7,453	10,413	46.1	48.9	13.9
Del Norte	8,917		34.3		10.2
Oregon	9,487	13,750	30.9		8.6
California	10,729		27.0		8.4
United States	9,586		32.2		10.7

1/ Source: U.S. Bureau of Census. County and City Data Book, 1972.
2/ Source: Socio-Economic Indicators, Department of Human Resources, 1977.

Table C-5 indicates the age distribution of the population in each county. The Josephine County statistics showing a higher median age and a relatively high proportion of persons age 65 and over is significant. It is largely the result of retired persons immigrating to the county. It also partially accounts for the relatively low income levels shown in Table D-4.

Table C-5. Population Ages, 1970, 1975. 1/ 2/

Area	Median Age	Less Than 18 Years (%)	18-64 Years (%)	65 Years and Over (%)
Curry	31.8	33.9	55.2	10.9
Josephine	35.6	32.3	52.0	15.7
Del Norte	29.2	36.2	54.3	9.5
Oregon	29.4	34.0	55.1	10.2
California	28.4	33.4	57.5	9.1
United States	28.3	34.4	55.7	9.9

1/ U.S. Bureau of Census. County and City Data Book, 1972.
2/ Center for Population Research and Census, Population Projection and its Counties, 1975-2000, Portland State University

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1/ Source: U.S. Bureau of Census: County and City Data Book, 1972.
2/ Oregon State University Extension Service. 1973. Resource Atlas of counties indicated.
3/ State of California Employment Development Department. 1975.

Median education levels for each of the three counties is very near the national and state averages or just over 12 years of schooling. Less than 2.5% of the counties population has had less than five years of formal education compared to the national average of 5.5%. They also have about 7% of the population with four or more years of college relative to the national average of 11.8%. 1/

Table C-6 shows several variables relating to the housing situation in the three counties relative to state and national averages. It indicates a higher percentage of owner-occupied houses although the median value of those houses tends to be lower than both state and national averages.

Table C-6. Housing, 1970. 1/

Area	% Owner-Occupied	Median Value, Owner-Occupied Single Family Dwellings ($)	% Lacking Some or All Plumbing Facilities
Curry	69.3	15,023	3.9
Josephine	73.1	13,657	4.1
Del Norte	64.4	13,491	1.7
Oregon	66.1	15,563	2.6
California	55.0	23,107	1.5
United States	62.9	17,130	5.5

1/ Source: U.S. Bureau of Census. County and City Data Book, 1972.

Table C-7 indicates that local governments in the three counties received approximately 50% of their revenues from state and federal sources in 1967. This rate was about 50% higher than state and national averages. Thus, the local county governments are relatively dependent on state and federal funds.

Table C-7. Local Government Finances, 1967. 1/

Area	Total (Million $) 2/	% Intergovernmental 2/
Curry	5.7	56.0
Josephine	11.5	50.0
Del Norte	8.7	45.9
Oregon	607.7	31.6
California	8,457.7	34.9
United States	58,235.4	34.7

1/ Source: U.S. Bureau of Census. County and City Data Book, 1972.
2/ Excludes interlocal revenue transfers.

Receipts from National Forest and Bureau of Land Management lands provide major portions of county revenues in all three counties. The relative importance of these revenues to specific programs within each county's budget is even higher. These payments are made in-lieu-of taxes and are based on set percentages of net revenues from the federal lands. Counties receive 25% of net revenues from National Forest lands and 50% of net revenues from O&C-formula lands managed by either the Forest Service or the Bureau of Land Management (an additional 25% of O&C-formula funds are plowback funds for resource management).

Table C-8 indicates the relationship between the total revenues of Curry and Josephine counties, in recent years and the revenue from National Forest, and BLM, lands. Del Norte County also receives a relatively small amount of in-lieu payments (roughly $100,000 annually in recent years).

Table C-8. Curry and Josephine County Revenues, 1972-73, 1973-74, 1974-75, 1/ 2/ 3/

	1973 4/	1974 4/	1975 4/
Curry County:			
National Forest Receipts	1,288,100	1,807,900	1,804,200
O&C Receipts 5/	1,382,500	1,722,500	2,109,300
Total Federal Land Receipts	2,670,600	3,530,400	3,913,500
Total County Receipts	5,368,300	5,551,300	6,937,300
% National Forest Receipts of Total	24.0%	32.6%	26.0%
% O&C Receipts of Total 5/	25.7%	31.0%	30.4%
Total Federal Land Receipts	49.7%	63.6%	56.4%
Josephine County:			
National Forest Receipts	713,900	976,200	959,700
O&C Receipts 5/	4,563,100	5,700,600	6,981,000
Total Federal Land Receipts	5,277,000	6,676,800	7,940,700
Total County Receipts	9,557,200	12,848,800	15,651,400
% National Forest Receipts of Total	7.5%	7.6%	6.1%
% O&C Receipts of Total 5/	47.7%	36.8%	38.5%
Total Federal Land Receipts	55.2%	44.4%	44.6%

1/ Source: Curry County Treasurer's Office.
2/ Source: Josephine County Clerk's Office.
3/ Numbers rounded.
4/ Fiscal Years (e.g. FY 1975: July 1, 1974 to June 30, 1975).
5/ Includes O&C-formula receipts from both BLM and Forest Service-managed lands.

The Siskiyou National Forest, covering 59% of Curry County, 36% of Josephine County, and 5% of Del Norte County, provides a wide variety of benefits. Some are economic in the form of employment, monetary flows, and county revenues. Other benefits, social in nature, are no less real. These include opportunities for pursuit of hobbies, recreation, and social interactions with families and friends. Although residents of the three counties (and particularly Curry and Josephine counties) enjoy most of both the economic and the social benefits, benefits accrue to persons and society at regional and national levels.

Table C-9 compares the general composition of the labor force in the three counties with state and national averages. (Since all categories are not included and some categories overlap, the numbers do not total 100%.) The statistics suggest that the counties tend to differ from state and national averages in that females and white collar workers account for a substantially smaller percentage of the labor force than those categories do in Oregon, California, or the entire United States. In contrast, workers in manufacturing industries account for a somewhat greater percentage of the labor force than they do either state-wide or nation-wide. The coastal counties, particularly Curry, differ more from state and national averages than Josephine County.

Table C-9. Some General Components of the Labor Force, 1970 1/ 2/ 3/

Area	% Manufacturing	% Wholesale & Retail	% Govt.	% Services	% Female	% White Collar
Curry	36.5	19.6	16.3	6.0	31.0	35.2
Josephine	24.8	22.2	16.5	8.0	34.5	42.6
Del Norte	27.3	20.2	20.9	8.6	33.9	40.0
Oregon	21.4	22.1	17.2	7.3	36.9	48.3
California	21.6	21.1	17.8	8.8	36.5	54.4
United States	25.9	20.1	16.1	7.7	38.1	48.3

1/ Source: U.S. Bureau of Census, County and City Data Book, 1972.
2/ Labor force, 16 years and older.
3/ Partial list of components.



Dan's Photo

Table C-10 shows the general components of the labor market in Curry and Josephine counties for both 1970 and 1974. Large components in the two counties include lumber and wood products, trade, government, and self employed/ agriculture/other.

← South Coast Lumber Co. Brookings, Oregon

Table C-10. Labor Market Analysis, Curry, Josephine, and Del Norte Counties, 1974-1977. 1/

Component	Curry County 1974	Curry County 1977	Josephine County 1974	Josephine County 1977	Del Norte County Sept. 1977
Civilian Labor Force	5,780	5,850	17,040	20,220	7,475
Employment	5,250	5,250	14,980	17,950	6,875
Unemployment	530	660	2,060	2,270	600
% Unemployment	9.2%	11.4%	12.1%	11.2%	8.0%
Manufacturing	1,520	1,220	3,040	3,740	1,750
Lumber&Wood Products	1,350	1,100	2,140	2,720	1,600
Other	170	120	900	1,020	150
Non-Manufacturing	2,510	2,960	8,380	10,390	5,550
Trade	690	820	2,590	3,180	1,000
Government 2/	1,030	1,280	2,780	3,030	1,500
Services, Misc.	460	440	1,640	2,350	2,850
Other	330	380	1,370	1,830	200

1/ Source: State of Oregon, Employment Division, Department of Human Resources.
2/ Includes local, state, federal, and local educational.

While the civilian labor force has grown relatively rapidly in the interior county of Josephine, it has grown at only 1/3 the rate in the coastal county of Curry (Table C-11). It should also be noted that growth in total employment has nearly kept pace with the growth in the civilian laborin Josephine County. However, employment growth in Curry County has been only 2/3 of the growth rate in the civilian labor force.

Growth in non-manufacturing employment has been very strong in both counties. Manufacturing employment has grown relatively rapidly in Josephine County but its growth has been weak to non-existent in Curry County. The self employed/agriculture/other component roughly followed the patterns for the manufacturing component.

Table C-11. Labor Market Dynamics, 1974-1977 1/

Component	Percent Change 1974-1977 Curry	Percent Change 1974-1977 Josephine
Civilian Labor Force	1	19
Employment	0	20
Manufacturing Employment	-20	23
Non-Manufacturing Employment	18	24

1/ Derived from Table C-10.

Unemployment, traditionally higher than state and national averages in Curry and Josephine counties, averaged 8.8% and 11.2% respectively in 1977. 1/ The rate in Oregon during that year was 8.3%, while it was only 7.0% nationwide. 2/ Seasonal variations tend to be substantial. Highest unemployment usually occurs from late November through March while lowest unemployment occurs from June through August (Table C-12).

Table C-12. Employment Trends by Month, 1977. 1/

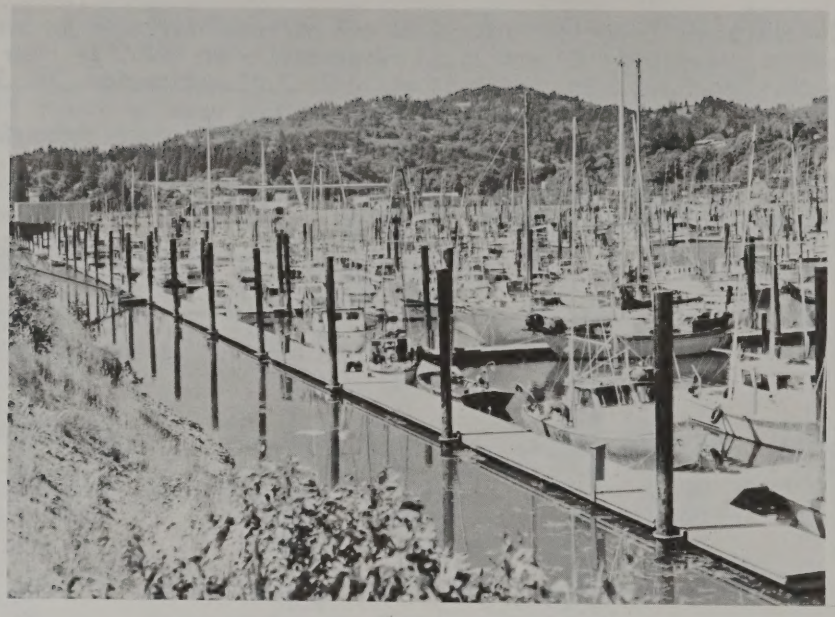
	Unemployment Rate (Percent)		
Month	Curry County	Josephine County	Del Norte County
January	13.1	15.8	17.1
February	13.7	15.0	14.3
March	11.6	14.0	13.9
April	8.7	11.4	10.8
May	7.1	10.9	10.6
June	6.7	10.1	8.0
July	7.0	9.8	9.3
August	6.5	9.4	8.1
September	6.7	8.8	8.0
October	7.2	9.3	9.4
November	9.4	9.8	14.6
December	9.7	10.6	15.6
Average	8.8	11.2	11.6

1/ Derived from State of Oregon, Employment Division, Department of Human Resources Statistics.

Several factors are responsible for the wide annual and seasonal variations in unemployment rates. Weather is an obvious factor for many economic activities which occur outdoors, especially logging and some types of recreation for example. However, economic factors generally are more important. The national demand for the products of the regionally dominant lumber and wood products industry tends to be highly sensitive to interest rate changes. The effect of high interest rates on the demand for wood products used in residential construction has been demonstrated in recent years. The large, sharp declines in 1973-74 quickly impacted raw material processing plants. Many local plants shut down and unemployment in the local industry reached high levels in 1974-75.

A "basic" industry is one which generates a net monetary inflow to a region from outside regions. They are essential for any local economy in our modern society. Employees of basic industries and their families require a large variety of goods and services. These needs create a demand for clerks in stores, gasoline station employees, doctors, dentists, and many other jobs. Most of this employment is labelled "non-basic" because it brings in very few net dollars from outside regions; most of the goods and services are consumed locally. It has been estimated that each 100 basic jobs will generate demand for as many as 200 or more non-basic jobs on a regional basis; however, this ratio varies considerably and is often much lower in small, rural economies.

1/ Employment Division Labor Market Statistics.
2/ Source: Statistical Abstract of the United States, 1975.



Commercial Fishing Boats in Brookings Harbor

In Curry and Josephine counties, virtually all of the manufacturing, mining, agriculture, forestry, and fishery employment should be considered basic employment. In addition, a relatively small percentage of the employment in retail trade, services, and public administration should be considered basic employment. The remaining employment should be considered "non-basic."

Table C-13. Indicated Employment Multipliers (Approximate) 1/

County	1960	1970	1974 (Est.)
Curry	1.6	2.0	2.1
Josephine	2.2	2.9	3.1

1/ Estimated from Oregon State University Extension Service Resource Atlases and from Employment Division Labor Market Statistics.

Table C-13 indicates that the employment multiplier (total employment divided by basic employment) varies substantially between the counties and that the multiplier has been increasing since 1960. This is consistent with growth trends in the various components of the labor market for each county (Table C-11). That is, non-manufacturing employment (largely non-basic) has increased much more rapidly than manufacturing employment which is largely basic employment.

Although the relative importance of the lumber and wood products industry to the economy of each county has decreased somewhat in recent years, the industry remains the major base in both counties (Table C-14). It seems likely to remain the major base in the foreseeable future; however, it has been estimated that the

combination of a projected reduction in timber supply and productivity increases will cause a 45% employment reduction in the Pacific Northwest lumber and wood products industry (nearly 60% of this reduction would occur due to the productivity increases necessary for the industry to remain competitive). 1/ Over the long-term, even substantial increases in timber supply will not prevent employment decreases in the industry in southwestern Oregon. 2/

Table C-14. Estimated Direct and Indirect Impact of the Lumber and Wood Products Industry.

County	Lumber & Wood 1/ Products Employment	% of Total Employment	Estimated County Multiplier 2/	% Dependent (Direct & Indirect)
Curry	1,100	18.8	2.1	39.5
Josephine	2,720	13.5	3.1	41.8
Sum/Average	3,820	16.15	2.7	40.6

1/ Table C-10.
2/ Table C-13.

The second largest and fastest-growing industry in both Curry and Josephine, the primary effect counties, is recreation and tourism industry. 3/

Table C-15 indicates that tourist expenditures in Curry County make a large contribution to the county's economy. The impact of growing tourist expenditures on employment in all Oregon coastal counties is indicated by the fact that the 16 year growth trend (1958-74) has been at the rate of nearly 7.5% compounded annually. 4/

Table C-15. Estimated Tourist Expenditures in Curry and Josephine County, 1977. 1/

Category	$ Spent in Curry County & Josephine County 2/
Out-of-State Tourists in Oregon (more than one day)	$16,470,000
Out-of-State Non Tourist (visitors-business)	700,000
In-State Inter-County	22,600.000
In-State Intra-County	3,700,000
Total	$43,470,000

1/ Source: Oregon State Highway Division. Based on tourist dollars spent by automobile drivers in the year 1977.
2/ Rounded to the nearest thousand dollars.

1/ Brian R. Wall. 1973. Employment Implications of Projected Timber Output in the Douglas-fir Region, 1970-2000. Pacific Northwest Forest and Range Experiment Station. Portland, Oregon.
2/ John H. Beuter, et al. 1976 Timber for Oregon's Tomorrow: An Analysis of Reasonably Possible Occurrences. Forest Research Laboratory - Oregon State University. Corvallis, Oregon.
3/ Josephine County Development Committee. 1968. 1967 OEDP Progress Report, Josephine County, Oregon.
4/ Daniel D. Oswald. 1973. Forest Resources and Forest Industrial Development in the Oregon Coastal Study Area, (unpublished report). Pacific Northwest Forest and Range Experiment Station.

Agriculture is the third leading income-producing industry of both Curry and Josephine counties. The largest components of the industry in Curry County are specialty horticultural crops, dairy cattle, and beef/cattle operations. Dairy products are most important in Josephine County. Other important components include beef/cattle operations and field crops. The gross value of farm products sold increased at an average annual rate of 8% in Josephine County between 1966 and 1975, reaching $9.1 million in the latter year. The growth rate for the same period in Curry County was 5%, reaching a level of $3.8 million in 1975. 1/ 2/

Other sizeable industries contributing to the economic base in Josephine County include foot-loose industries (industries where factors of livability, climate and desirable labor force characteristics are the primary considerations and distance from markets is of secondary importance). 3/ Growth in apparel, electronics, and machinery industries within this category has accounted for most of the industrial diversification in Josephine County within recent years. The food processing and mining/mineral industries, and state and federal government also contribute significantly to the Josephine County economic base.

The food processing and fishery industries and state and federal government are other significant contributors to the Curry County economy.

D. Energy Resources

Hydro, geothermal, solar, wind, tidal, fossil fuel, wood and nuclear energy sources are the probable power forms at the future. This Unit does not have any potential geothermal nuclear or tidal energy forms. Solar and wind energy sources have a seasonal possibility for use in the future on this Unit. However, many technilogical advances are necessary for this to become a reality. It is possible that low grade coal exists on this Unit but Geologist estimate that the reserves would be low. Wood residues are utilized by local residents for firewood. At this time, it would not be economically feasible to use wood as a commercial energy source. There are no hydroelectric dams located on this Unit; however, several potential dam and reservoir sites are being considered within the Planning Unit. Sites listed by the U.S. Geological Survey (1969) include Lower Chetco River, Winchuck River, Indian Hill on Wood Creek, Sucker Creek, and Eight Dollar on the Illinois River. 4/ More recent information states Sucker Creek site has a potential of 3.6 MW; the Fall Creek site on the Illinois River has a power potential of 59 MW; and the Boulder Creek site on the Chetco River has a potential for 29 MW assuming mean flow and 100 percent efficiency. 5/ Five pumped-storage sites have been identified by the Corps of Engineers including Bear Wallow (618), Buckskin Peak (619), Pollywog Butte (628), Packsaddle Mountain (629), and Snow Camp (634). 6/ The potential reservoir sizes range from 150 to 410 acres with generating capacities of between 1000 MW and 5000 MW and storage ranging from 7,900 to 39,000 acre-feet. 7/

1/ Oregon State University Extension Service. 1973. Resource Atlases for Curry and Josephine Counties.
2/ Oregon State University Extension Service.
3/ Josephine County Development Committee. 1968 1967 OEDB Progress Report: Josephine County, Oregon.
4/ U.S. Geological Survey. 1969. Mineral and Water Resources of Oregon Bulletin 64, A.E. Weissenborn, ed., U.S. Government Printing Office.
5/ Letter from Henry W. Coulter, Acting Director U.S. Geological Survey. Reston, Virginia.
6/ U.S. Army Corps of Engineers. 1976. Pumped Storage in the Pacific Northwest, Report Number 26, Portland, Oregon.
7/ U.S. Army Corps of Engineers. 1976. Ibid.

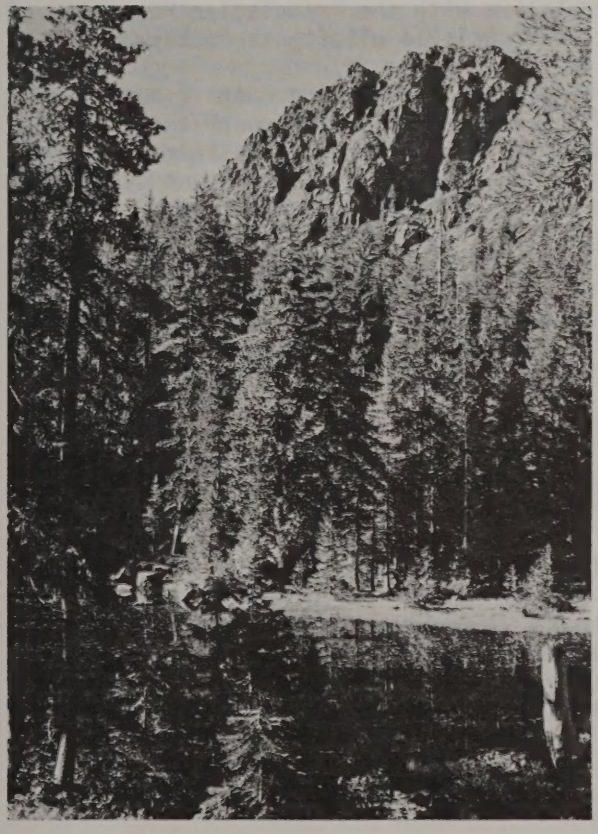
These and other potential sites were included in the Illinois River Wild and Scenic River Final Report to the Secretary of Agriculture. These sites include Fall Creek and Kerby on the Illinois River and Deer Creek (Draper Creek), Sucker Creek, Althouse Creek, Rough and Ready Creek, Indian Hill (Wood Creek), Lone Mountain (W. Fork Illinois), and Gilligan Lake (Elk Creek).

E. Geology and Minerals

The Chetco-Grayback Planning Unit lies primarily within the highly dissected, rugged, mountainous terrain of the Klamath Mountain's geomorphic province. The latest geologic interpretations place the western one-quarter of the Unit in the Coast Range province. The topography of this part of the Coast Range is similar to that of the Klamath Mountain. Narrow canyons and ridges with steep slopes predominate and landsliding is common, especially in the western part of the area.

The oldest rock type in the Chetco-Grayback Planning Unit is a northeast trending belt of metasedimentary and metavolcanic rocks mapped by Wells (1940) in the Grants Pass quadrangle, and which he later named the Applegate Group.

The Applegate Group is found in the eastern area of the Chetco-Grayback Planning Unit. The rock types include pale green to greenish gray altered lava flows (greenstone), tuff breccia, stratified tuff and intrusive rocks of similar basaltic to andesitic composition. The metasedimentary rocks include chert, argillite, and quartzite with minor pods of marble like the one in which the Oregon Caves is located.



Within or bounding the Applegate Group rocks are long narrow bodies of serpentinite that appear to separate them from the younger sedimentary rocks to the west. The serpentinite and metavolcanic rocks of the Applegate are sources of chromite, copper, and gold mineralization in the Planning Unit.

West of the Applegate Group rocks are the metamorphosed sedimentary rocks of the Galice Formation. These rocks were originally deep ocean sediments such as mudstones and siltstones with some interbedded sandstones. There are also minor amounts of interbedded metavolcanic rocks. Trending toward the northeast and dipping generally to the east the formation is now made up of slate and argillite. The metasandstones are well indurated and quartz veined.

← Sanger Peak from Wiskey Lake

A large intrusive mass of granite type rock (Grayback Stock) makes up a considerable portion of the far northeastern part of the Planning Unit. This rock is described as being mostly quartz diorite; however, its composition varies from gabbro to granodiorite. The contact areas around the intrusive body have been thermally metamorphosed and the rocks are recrystallized to schistose or gneissic textures.

Trending through the middle of the Chetco-Grayback Planning Unit are a variety of volcanic rocks known as the Rogue Formation, including fine to coarse grained tuffs, agglomerates, flow breccia, and lava flows. Rogue Formation Rocks underlie much of the eastern part of the Kalmiopsis Wilderness Area and here are metamorphosed to greenschist and greenstone.

Serpentinite and various peridotites are very prevalent in much of this central portion of the Planning Unit. These rocks trend in a broad north to northeast direction and extend southward into Northern California. These ultramafic rocks are the source of chromite deposits, nickel laterite deposits, and minor copper mineralization in the Planning Unit.

West of the serpentinite is a north-trending plutonic rock mass consisting of gabbro and meta-gabbro. Magnetite is common in the gabbroic rocks and in some places may be of sufficient concentration to have some mineral potential. Smaller diorite plutons occur in the upper Baldface Creek area, the headwaters of Diamond Creek, and at Collier Butte, just north of the Planning Unit.

The western part of the Planning Unit is underlain by graywacke, sandstones, and mudstones of the Dothan and Otter Point Formations. These marine deposited sedimentary and minor volcanic rocks are correlative with the Franciscian Formation of California. No important mineralization is associated with these rocks.

The overall structural pattern in the Chetco-Grayback Planning Unit is a part of the general Klamath Mountain's pattern which consists of north-south trending belts which curve around toward the northeast. Generally the boundaries between the belts are fault contacts with the serpentinite and granitic plutons occurring in the zones of faulting. A large thrust fault zone trends northeastward through the Illinois Valley area of the Planning Unit. Structurally, the fractured and sheared sandstones and mudstones of the Dothan and Otter Point Formations have been thrust under the older metamorphic and ultrabasic rocks of the central part of the Planning Unit. The fractured and sheared characteristic of exposed rocks of the Dothan and Otter Point Formations contributes to the instability of its slopes, especially north of the Chetco River. Figure E-1 illustrates the general geology of this Planning Unit.

Mining activities on this Unit have been very sporadic during the last 100 years; however, with the ever-increasing demand for mineral resources this area could potentially be of very great importance.

Historically, the mining operations had been confined to gold, which produced steady, profitable employment during the pioneer days. Early prospectors discovered the gold deposits in Sucker, Althouse, Josephine, Canyon, and many other creeks on the Unit. Small communities developed in many of these areas, but slowly disappeared as the minerals were exhausted or became uneconomical to work. Mining on the many hundreds of existing claims may again be economically feasible with the present inflated gold prices.

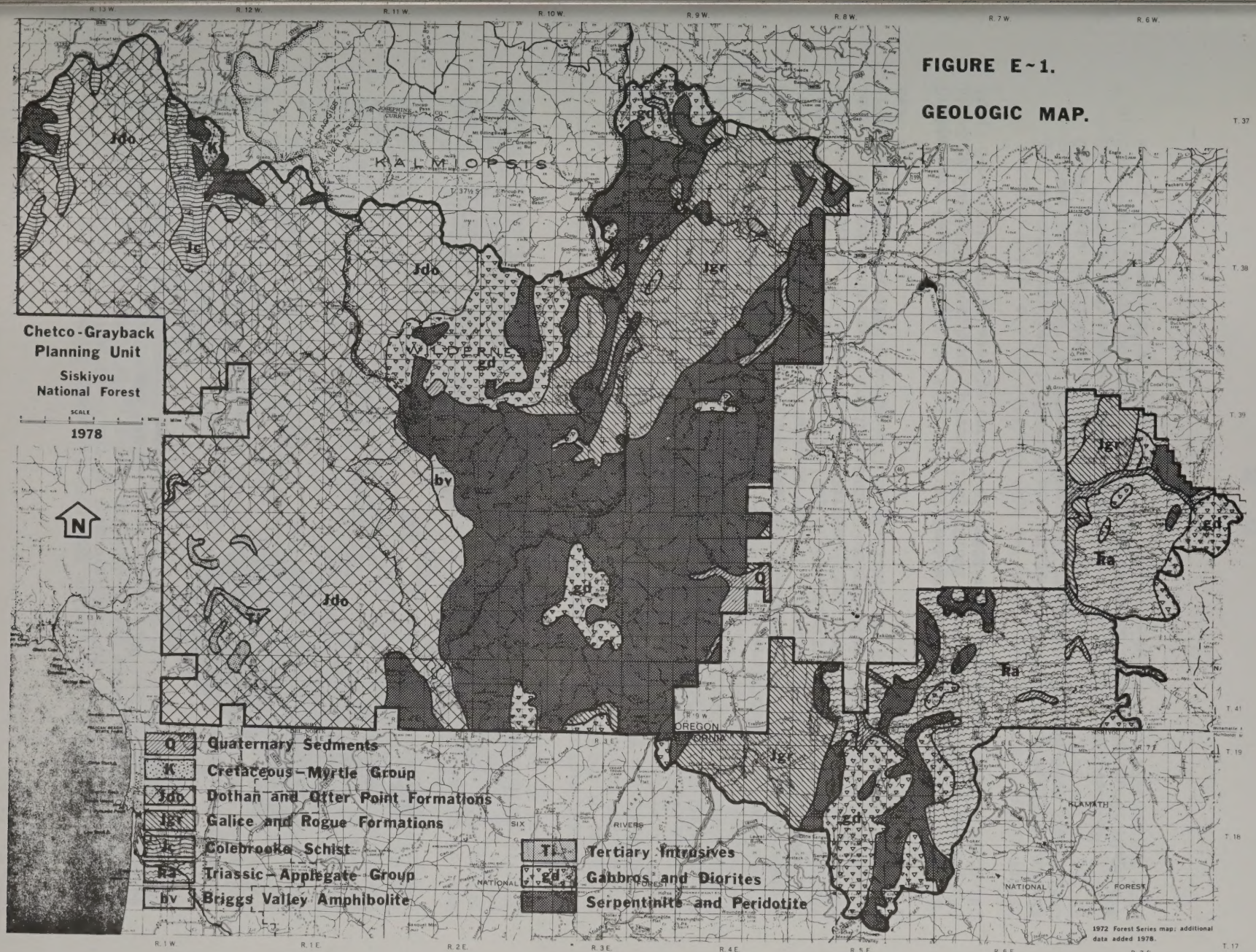


Early Mining Cabin

Other potentially available minerals that are present on this Unit are chromite, cobalt, copper, manganese, mercury, molybolenum, nickel, platinum, and iron. The United States imports approximately 70%, or more, of at least six (manganese, cobalt, chromium, platinum, mercury, nickel) of these minerals. 1/ Although some have been mined, inflation, low grade ore deposits, and distant processing plants have limited the mining industry from actively operating this area on a large scale; however, new technology for extracting these minerals could make a mining operation economically feasible. For example, hydrometallurgical and electrolytic processes have been used successfully to recover nickel, cobalt, chromium, and iron from low grade lateritic soils, also, eliminating the need for a conventional smelter. 2/ Energy requirements are relatively low, and except for minor operation losses, only coke and oxygen are consumed in an efficient, nonpolluting process. It is predicted that this process will be available for commercial use in the very near future.

Preliminary figures indicate the total net tonnage (excluding unweathered rock) is about 28,000,000 metric tons (gross = 100,000,000 metric tons lateritic material in 13 deposits) with an average content of 0.82% nickel, 1.3% chromium, 0.08%

1/ Imports supplied significant percentages of minerals and metals consumption in 1975 - Bureau of Mines, U.S. Department of Interior (Import-Export data from Bureau of the Census).
2/ Siemens, R.E., Good, P.C., and Stickney, W.A., 1975. Recovery of Nickel and Cobalt from Low-Grade Domestic Laterites. U.S. Bureau of Mines Report of Investigation No. 8027.


FIGURE E-1.
GEOLOGIC MAP.
Chetco-Grayback Planning Unit
Siskiyou National Forest
SCALE
1978
N
Jdo
K
Jc
Jgr
gd
bv
Q
Tr
Ta
Tf
Quaternary Sediments
Cretaceous-Myrtle Group
Dothan and Otter Point Formations
Galice and Rogue Formations
Colebrooke Schist
Triassic-Applegate Group
Briggs Valley Amphibolite
Tertiary Intrusives
Gabbros and Diorites
Serpentinite and Peridotite
KALMIOPSIS
WILDERNESS
OREGON
CALIFORNIA
SIX RIVERS NATIONAL FOREST
KLAMATH NATIONAL FOREST
1972 Forest Series map; additional data added 1978.

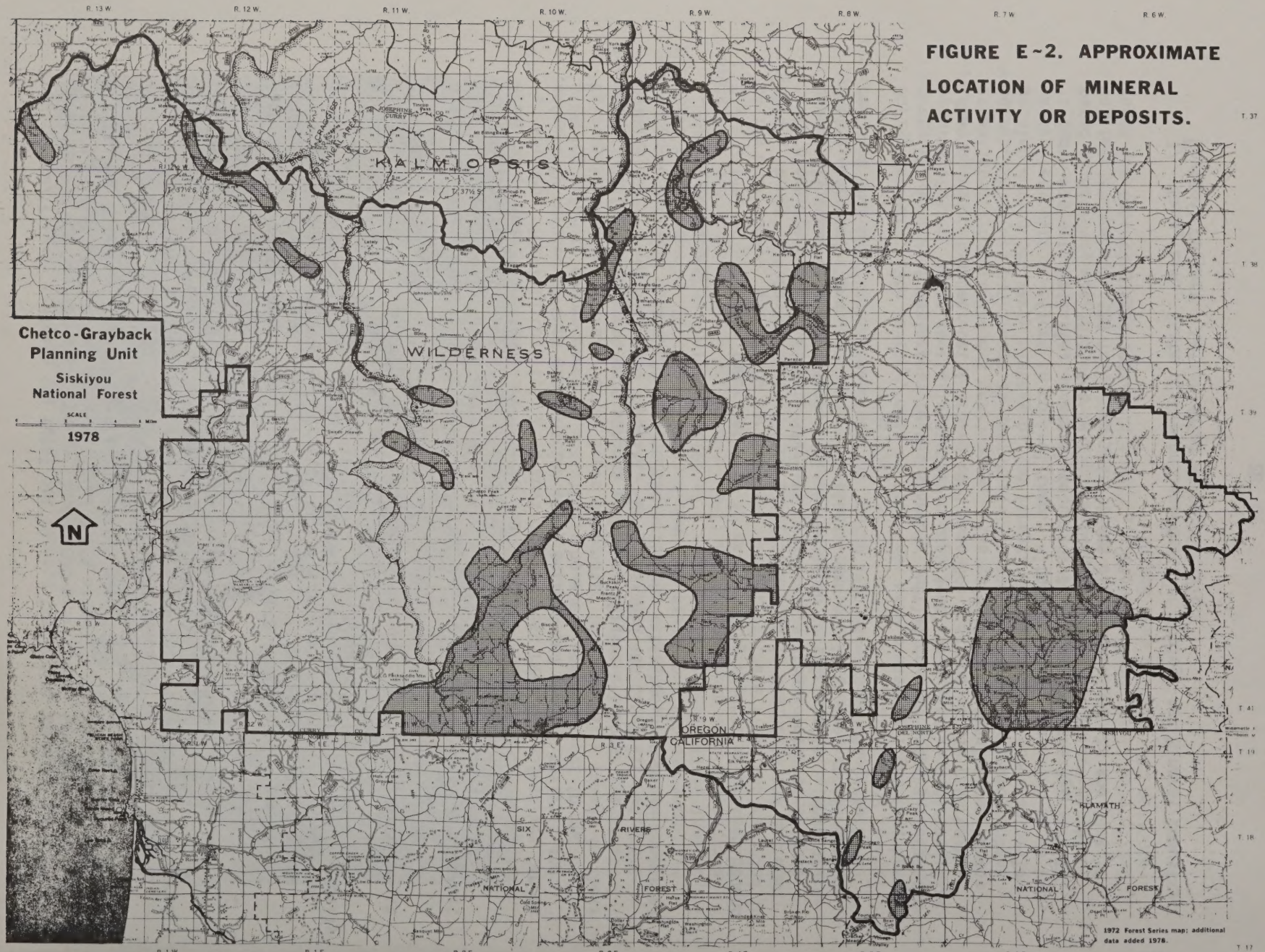


FIGURE E-2. APPROXIMATE LOCATION OF MINERAL ACTIVITY OR DEPOSITS.

Preliminary figures indicate the total net tonnage (excluding unweathered rock) is about 28,000,000 metric tons (gross = 100,000,000 metric tons lateritic material in 13 deposits) with an average content of 0.82% nickel, 1.3% chromium, 0.08% cobalt, and 26% iron. Under the present market conditions (3/76), nickel is $2.20 per pound, chromium is $2.40 per pound, and cobalt is $4.00 per pound, and, assuming a 90% recovery factor, the potential gross value of the net tonnage is about three billion dollars (excluding the iron). 1/ These figures are considered by geologists to be conservative, even though some deposits may not be mined in the near future; however, if mining becomes a reality, additional tonnage could possibly be discovered in adjacent areas.

Several large mining companies have shown considerable interest in the mineral deposits in this area and subsequently have spent considerable amounts of money for exploration. Most of the exploratory activities have occurred in or adjacent to roadless area 6709; however, geologic formations throughout the Unit (principally the east portion of roadless area 6709 and the Kalmiopsis Wilderness) indicate that potential mineral deposits could exist in these areas (other than what has already been discovered and/or worked). Nickel and chromite appear to be the most abundant mineral deposits in the area.

Operation of any claim requires disturbance of the land and the vegetation on that land. Although well-planned and implemented operations (as required under recently-established administrative mining regulations) can minimize environmental effects, at least some temporary impacts would occur. Some degree of reclamation is required. Possible conflicts with most other forest resource objectives can be adequately reduced through coordination among parties and careful analysis and planning prior to commencement of activities; however, any conflicts in the Kalmiopsis Wilderness and/or other lands designated to essentially remain in their natural state will present more serious problems. Figure E-2 shows the areas of primary activity and/or known deposits. Well-designed and carefully-run operations can minimize damage, if any, to the soil, the watershed, and other resources.

F. Fire Management

Early wildfires played an important part in establishing vegetative patterns found on the Unit today. One of the earliest and largest of these fires was recorded in 1868. It was said to have burned from Yachats, Oregon in the north and extended south along the coast to Klamath River in California. It was believed to have burned all summer and the distance inland varied up to thirty miles. Most brushfields, hardwood stands, knobcone pine stands, and poorly-stocked conifer stands resulted from many such fires occurring in the 19th and early 20th centuries.

During the early 19th century, most of the fires were caused by lightning; however, the influx of immigrants to the sparcely settled country brought widespread burning of large areas to aid in various occupational activities. Organized fire fighting did not appear until around 1906 when the Siskiyou Forest reserve was established. Forest Rangers were charged with enforcing the regulations on the forest, which was not always an easy task. Incendiary fires continued to be a problem during the early history of the forest. Many large fires burned in low value areas with no effort to control them. Although modern equipment as we know it today was not available, an aerial detection patrol by the Army Air Service, based at Medford, was initiated in 1920 to cover southern Oregon and northern California; however, the following year it was discontinued due to the lack of funds for operating expenses.

1/ Ramp, Len. State of Oregon Department of Geology and Mineral Industry, Personal Contact - Letter dated March 16, 1976.



Store Gulch Guard Station and Forest Camp

The Forest Service initiated an active program to develop roads and trails through the Forest, but travel in the interior was still very slow and difficult. With the advent of the Civilian Conservation Corps in 1933, road development progressed much more rapidly and access was made easier. The C.C.C. personnel were also used on most of the fire fighting crews. In 1938, the airplane was pressed into service again to drop supplies to fire crews in the interior areas not accessible to pack stock.

During the late 1950's and early 1960's the increased demand for timber resulted in a rapid development of the forest transportation system giving access to previously isolated areas. Men and equipment could be dispatched within minutes after the fire had been reported. Therefore, very few large fires have occurred in recent years because of this access and the modern aerial support (smokejumpers, aerial retardants and helicopters) now available.

Lightning caused fires (Av. No. 10-15) averaging ¼ acre in size occur every year especially on the eastern portion of this Unit; however, man's activities have caused most of the problems. These fires have been a result of careless smokers, camping, timber harvest activities, warming fires (hunting and fishing), and incindiarism. Over the past six years the Forest has averaged about 47 of these fires per year with an average size of 2.7 acres.

Fire management's overall goal is to provide protection of the resources by minimizing value losses by fire, reducing hazards, eliminating risks and fulfilling the resource management objectives involved. This is accomplished by public education, personal contacts, Forest closures, regulated use, and for reduction of risks and fuel hazards.

Fuels occur naturally or result from management activities on the Unit. Some residues are beneficial for nutrient cycling, soil protection, wildlife cover, and micro climate effect; however, excessive quantities may present problems to resource use, protection, and management. By manipulation or reducing these fuels, forest protection and management objectives can be accomplished while preserving and enhancing environmental quality. Timber harvesting, thinning, road construction, land clearing and similar operations are types of activities which usually increase the fuel load and increase the rate of fire spread and resistance to control. No single method will apply uniformly because of variations in vegetative type, age and density of the cover, degree of cutting, utilization, harvesting method, climate, topography, soil and risk will influence the treatment methods to be used. Methods of abatement include broadcast burning, burning of piled debris, yarding of unmerchantable material to landings for disposal, burying and chopping. There is approximately 1,600 acres broadcast burned and 1,100 acres piled and burned on this Unit every year.

The amount of slash left in newly-harvested areas is steadily decreasing. This is largely a result of more efficient logging systems and improved market conditions - especially for traditionally low value material such as low value conifers, hardwoods, and cull material. Present trends indicate that someday it may be economically feasible to utilize the entire tree. Since most of the logging residue would be removed from the harvest area under these conditions, slash burning may become unnecessary; however, during the interim, it will be necessary to reduce fuel loading to satisfactory levels, commensurate with the risk of ignition, by prescribed burning if other reasonable procedures are not available.



Bolan Peak Lookout, Page Creek, July 1944

Prescribed burning of forest debris is conducted in a manner designed to minimize any potential adverse effects on air quality, soil, wildlife, and other resources and resource management considerations. For example, the trend in recent years has been to accomplish broadcast burning during the spring when fuel and soil moisture levels are high. This results in less intense fires and minimizes or eliminates damage to soils. Another example is the Smoke Management System which controls and maintains satisfactory air quality in specified designated areas. This effort is also applied to other areas not defined as designated areas but which are never-the-less sensitive to smoke. Factors that must be determined and are applicable to pre-burn planning include: slash acreages; volume and type of slash; probable evolution of the smoke column vent height; the direction and velocity of smoke drift; mixing characteristics of the atmosphere; and the distance each burning operation is from designated areas.

The yarding of unmerchantable and unutilized materials to landing areas for disposal provides several benefits. First, by removing the larger-size fuels, the operation substantially reduces the total volume of debris left on a given harvest unit. Second, the broadcast burn which may follow will be less intense (less heat generated from less fuel and fewer heavy concentrations of fuel). (As mentioned earlier, broadcast burning in the spring, where applied, also reduces fire intensity.) The damage to soils resulting from intense fires will thus be substantially reduced or even eliminated. Finally, a side benefit is that the unutilized materials are concentrated in an accessible area (a landing along a road) for use by firewood cutters and others.

Presuppression plans for the Unit have been developed to facilitate fire suppression efforts. These plans include basic elements such as a fire management organization and financial plan, fire prevention plan, fire detection plan (both aerial and fixed ground lookout stations), presuppression plan which includes dispatching, fire danger ratings, fire weather forecasting and training, and fire mobilization plans. All fire suppression efforts are dependent on these presuppression plans.

Until potential fire management areas can be analyzed or studied sometime in the near future, suppression will be fast, energetic, thorough, and safe with the objective to control at ten acres. Subsequently, land management prescriptions will be developed to establish fire management goals for each fire management area or, if necessary, for each individual land management classification. These fire management areas, if established, will have a more flexible protection objective which may require (after extensive evaluation) either greater or less fire suppression efforts than the present policy.

G. Fisheries

The Chetco-Grayback Planning Unit is rich in aquatic resources. The Unit covers portions of five coastal watersheds, including Chetco, Illinois, Pistol, Smith, and Winchuck. The Illinois River, the major southern tributary of the Rogue River, drains the eastern portion of the Unit and occupies about 45 percent of the land area. Pistol, Chetco, and Winchuck rivers drain the western perimeter of the Unit and respectively occupy about 7%, 29%, and 7% of the area. The Smith River drains about 12% of the south-central portion of the Unit. All watersheds in the Unit receive moderate to high average rainfall and are dissected and drained by more than 2,300 miles of perennial and intermittent streams.

Fish populations of the Unit are abundant and diverse, with more than 14 species maintaining reproducing populations in its rivers and streams (Table G-1). The most economically important group, coldwater gamefish, includes both resident and anadromous stocks. Anadromous stocks include chinoook salmon, steelhead rainbow trout, and coastal cutthroat trout. Resident populations of rainbow and cutthroat trout occur in many tributaries of the five watersheds, and eastern brook trout, an exotic species, are found in several streams and lakes in the eastern portion of the Unit. Eight species of non-game fish are scattered in streams throughout the Unit, and at least 6 species of warmwater gamefish occur incidently in the mainstem Illinois River. Occurrence of these fish is a result of dispersion from farm ponds in lowland valleys. Warmwater gamefish are not known to reproduce in streams within the Unit.

Table G-1. Species of fish that occur in the Chetco-Grayback Planning Unit.

Gamefish		
Coldwater	Warmwater 1/	Non-game Fish
chinook salmon	largemouth bass	Pacific lamprey
coho salmon	bluegill	redside shiner
steelhead	pumpkinseed	speckled dace
cutthroat trout	green sunfish	three-spine stickleback
(searun)	black crappie	carp
(resident)	brown bullhead	freshwater sculpins
white sturgeon		

1/ Incidental occurrence.

Native resident rainbow and cutthroat trout are present in approximately 220 miles of streams in the Unit with perennial flow. Angling pressure on these populations is modest, averaging about 50 man-days per mile per year, and producing a fishery valued at over $192,000 per year. Rainbow and/or eastern brook trout also occur in four lakes in the Unit, totalling 24 surface acres. While small and scattered, the lakes support a substantial fishery valued at over $67,000 per year. The method of evaluating these fisheries consisted of estimates of man-days fishing effort supplied by Oregon Dept. of Fish and Wildlife, multiplied by net benefits per angler day of $10.60 for streams and $16.00 for lakes (Gordon et al. 1972), and an adjustment in value based on increases in the consumer price index for years between the date of Gordon's study and 1975. Values of resident trout fisheries by watershed are listed in Table G-2.

Table G-2. Net annual value of fisheries for resident trout in streams and lakes of the Chetco-Grayback Planning Unit.

watershed	value streams	value lakes	Total values
Chetco	$ 45,000	$23,900	$ 68,900
Illinois	$ 90,800	$43,700	$134,500
Pistol	$ 16,400	-	$ 16,400
Smith	$ 19,800	-	$ 19,800
Winchuck	$ 20,800	-	$ 20,800
totals	$192,800	$67,600	$260,400

Many streams that originate within or traverse through the Unit are important producers of anadromous salmonids. The most important streams for spawning, rearing, and migration include the Chetco River and its tributaries, Emily Creek and the South Fork, the Illinois River, and the North Fork Smith River and its tributaries, Baldface Creek and Chrome Creek. Many smaller streams also serve as spawning and rearing habitat. Average annual escapement of anadromous salmonids in each watershed is listed in Table G-3.

Table G-3. Estimated annual escapement of anadromous salmonids in streams which intersect the Chetco-Grayback Planning Unit.

	species				
system	chinook	coho	steelhead	cutthroat	total
Chetco	25,000	5,000	17,000	5,000	52,000
Illinois	20,000	1,400	30,000	3,000	54,400
Pistol	2,000	200	1,200	4,000	7,400
Smith	15,000	5,000	30,000	5,000	55,000
Winchuck	2,000	200	1,500	1,500	5,200
totals	64,000	11,800	79,700	18,500	174,000

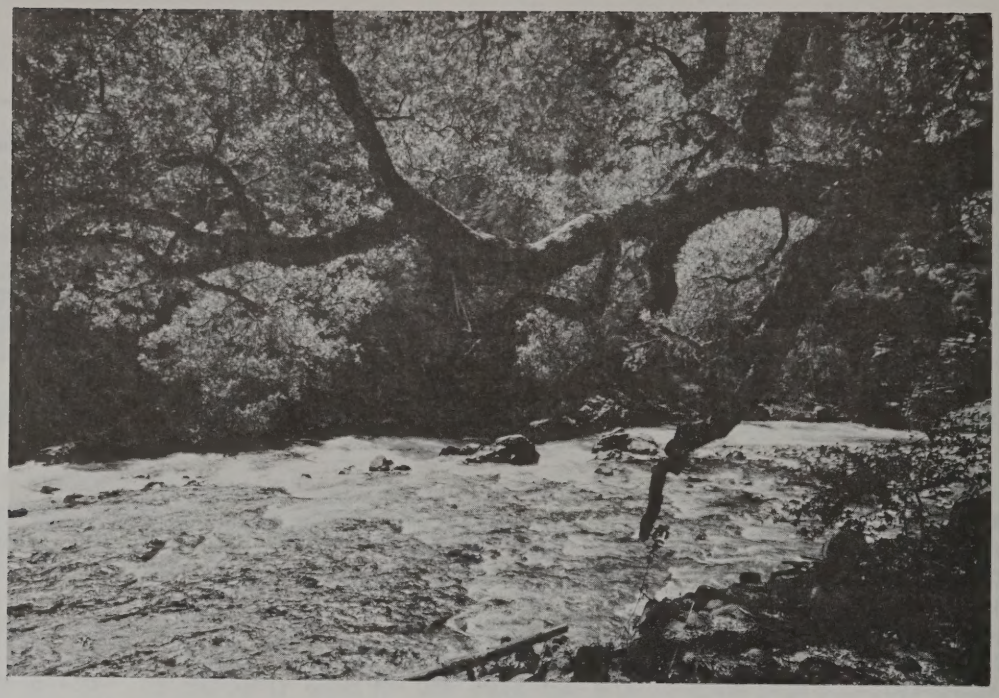
Life histories of salmon reproducing in streams of the Planning Unit vary by species. The annual migration of fall-run chinook begins in early August for the Illinois stocks and continues into December. Adults average over 30 inches in length and 15 pounds in weight, but individuals frequently exceed 30 pounds. Spawning begins as early as late October in the Illinois. Peak activity generally occurs between mid-November and late December. In the Illinois system, spawning is distributed along much of the mainstem and in many tributaries, including some that become intermittent in summer. Fall chinook runs in the Chetco, Pistol, Smith, and Winchuck are later, beginning in November and continuing through January. Peak spawning activity occurs in December and January.

Emergence of fall chinook fry occurs in February and March and seaward migration of juveniles occurs the following summer after only a few months of rearing in the rivers. The fish return to the rivers as adults on a spawning migration after spending from one to four years at sea.

Small runs of coho salmon also spawn in the Unit. Each year coho enter the rivers in October and November and migrate in low numbers to nearly all major tributaries within the Unit. Adults average about 27 inches in length and 10 pounds in weight. Spawning occurs in December, fry emerge in February and March, rear in the rivers from one to two years, and migrate to sea in May and June at a length of 5 to 6 inches.

Winter-run steelhead begin entering the rivers in November and continue through March, with peak entry in December. Adults average about 24 inches in length and 6 pounds in weight. Spawning begins in February and peaks in late March along most of the mainstem rivers and perennial tributaries within the Planning Unit. Most winter steelhead fry emerge in May and June and rear in natal tributaries or mainstem rivers for two years. Juveniles enter the sea at a length of 7 to 8 inches. Winter steelhead usually spend two years at sea before returning to spawn.

The life history of searun cutthroat is similar to that of winter steelhead, except adults return to spawn after one season of ocean residence. Adult cutthroat average 12 inches in length, but some older specimens attain a length of 24 inches and a weight exceeding 4 pounds. Spawning occurs in early winter.



Illinois River

Populations of anadromous salmonids in rivers and streams which traverse the Planning Unit sustain important sport and commercial fisheries. Sport fisheries total over 186,000 angler-days, with a harvest of over 120,000 fish, and an annual net value of over $15 million. Catch, effort, and net economic values for salmon, steelhead, and cutthroat trout are presented in the Appendix.

Estimates of net economic value, located in the Appendix, are based on studies in Washington by Mathews and Brown (1970) which indicate that a net value of $28 per angler-day should be considered an absolute minimum for evaluating salmon fisheries threatened by alternative resource uses. The $28 value was based on a freshwater salmon fishery, while saltwater salmon fishery values were estimated at $63 per day in some coastal zones of Washington. Other studies by Brown et al. (1972), based on revision of a survey conducted in 1964, indicate that steelhead anglers in Oregon average a net economic benefit of $20 per angling day. Tuttle et al. (1975) recommend using $28 per angler-day for steelhead and freshwater salmon fishing because this value is based on the most recent survey and was conducted using superior techniques and data.

A value of $63 per angler-day was used for evaluation of marine sport salmon fisheries.

Since no studies are available on net values of cutthroat fisheries, and since in southwest Oregon cutthroat and steelhead fisheries are similar, the daily value of steelhead fisheries was also applied to local coastal cutthroat fisheries. Values for all anadromous fisheries were increased by the percentage rise in the consumer price index between 1967 (the year of Mathews and Brown's study) and 1975.

Rivers which traverse the Planning Unit also produce large numbers of salmon which are caught by commercial fisheries of California, Oregon, Washington, and British Columbia. The combined value of these fisheries is estimated at over $2.7 million per year (Table located in Appendix). Estimates are based on data from several sources. Catch/escapement ratios for chinook and coho salmon from southern Oregon rivers were developed after reviewing catch/escapement ratios from the Columbia River, Elk River on the southern Oregon coast, and consulting many biologists. No general agreement exists among biologists, but ratios between 3/1 and 6/1 have been suggested for fall chinook and coho on the south coast. At the urging of the National Marine Fisheries Service (Shelton, 1973; Galler, 1975) a catch/escapement ratio of 5/1 was utilized for fall chinook and coho salmon.

Two sources of information are available for separating sport and commercial catch of salmon, one for Columbia River stocks (Oregon State Game Commission, 1973), and a second for coastal river stocks (Kunkle and Janik, 1976). Oregon Game Commission data indicate that 80% of the ocean catch of Columbia River salmon is taken by commercial fisheries, and 20% by sport fisheries. Kunkle and Janik report that catch from coastal rivers is distributed 72.5% to commercial fisheries and 27.5% to sport fisheries. In determining the annual value of fish production from the Siskiyou, catch distribution for coastal rivers of Oregon was used.

The worth of commercial fisheries calculated (See Appendix) represents a dockside commercial value, or the approximate value paid to fishermen for their catch. While this value is not directly comparable to the net value of sport fisheries, Tuttle et al. (1975) suggests that ex-vessel (prices paid to fishermen) market prices may be used to represent the estimated net value of commercially caught fish. For a more detailed discussion of this subject see Wahle et al., (1973).

The total annual net value of sport and commercial fisheries for anadromous salmonids produced in watersheds which intersect the Planning Unit (See Figure G-1) exceeds $18 million, but only a small portion of the value is directly attributable to the Unit. Since detailed inventory of fish populations and water production has not been conducted for many individual streams within the Unit, two assumptions were made to assign fishery values to watershed areas within the Unit, 1) water quantity and quality are the primary factors limiting natural populations of salmonids in streams that flow through the Unit, and 2) high quality water produced in all geographic areas of each watershed makes approximately equal per unit contribution to fish production. Based on these assumptions, fishery values attributable to lands of the Planning Unit were calculated by direct proportion. The percentage area of each watershed within the Unit was determined and the total fishery value for the watershed was multiplied by the percentage to estimate values attributable to the Unit.

The estimated total annual net value of anadromous fishery resources attributable to the Planning Unit, as calculated by this method, exceeds $7.4 million (Table G-4). More than 80% of the value is associated with portions of the Chetco and Illinois watersheds.

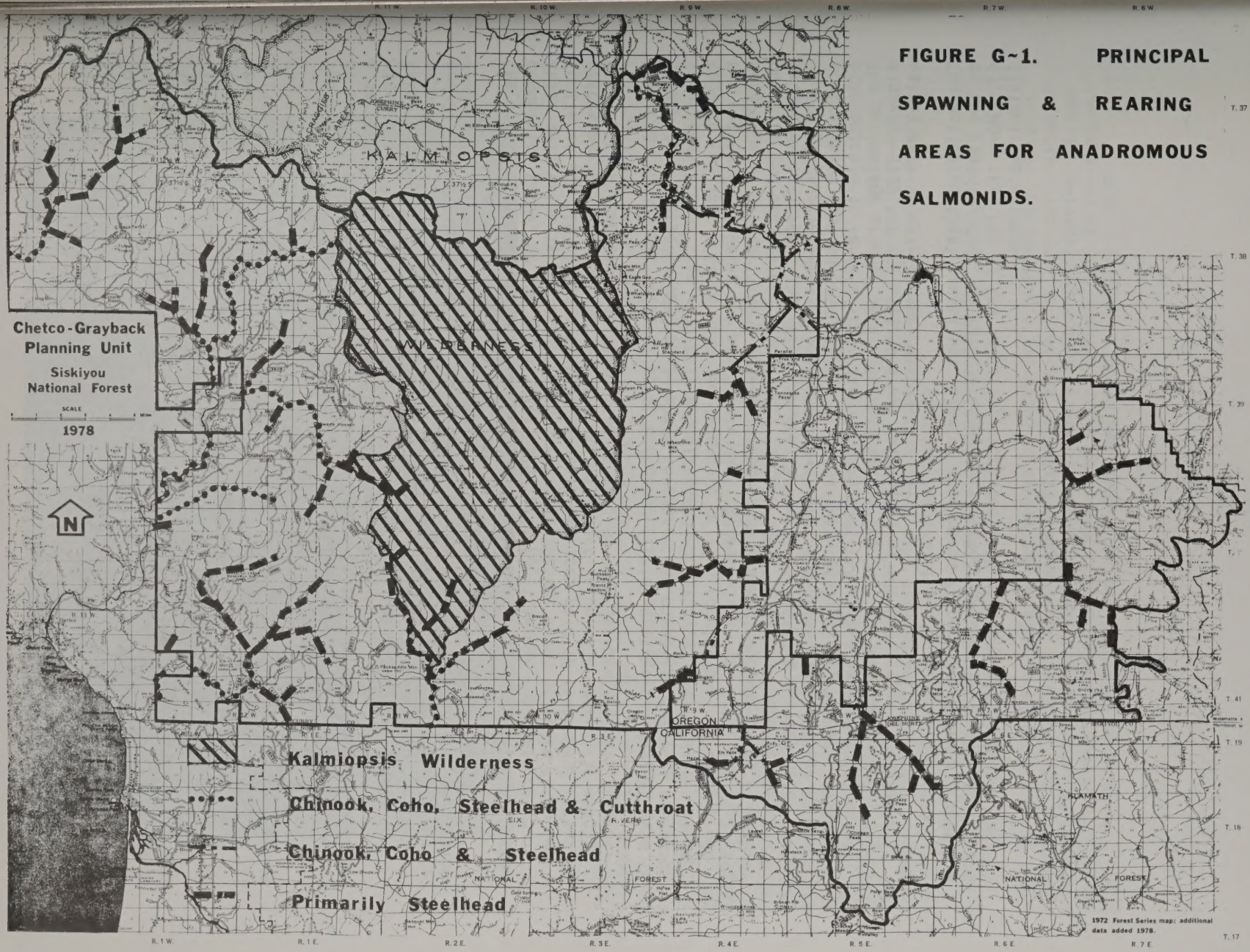


FIGURE G~1. PRINCIPAL SPAWNING & REARING AREAS FOR ANADROMOUS SALMONIDS.

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE
Siskiyou National Forest
P. O. Box 440
Grants Pass, Oregon 97526

1950
November 20, 1978

Dear Reviewer:

Under the provisions of Section 102(2)(C), Public Law 91-190, the National Environmental Policy Act of 1969, we have prepared a Draft Environmental Statement on the proposed Land Management Plan for the Chetco-Grayback Planning Unit, Siskiyou National Forest, Oregon.

This Statement evaluates five land management plan alternatives for approximately 464,712 acres of National Forest in southwestern Oregon. A preferred alternative is indicated.

This statement is offered for your review. Comments should be recieved no later than February 1, 1979, at the office of:

William H. Covey
Siskiyou National Forest
P. O. Box 440
Grants Pass, Oregon 97526

William H. Covey

WILLIAM H. COVEY
Forest Supervisor

Enclosure

Table G-4. Estimated total value of sport and commercial fisheries for anadromous salmonids produced in Chetco, Illinois, Pistol, Smith, and Winchuck Rivers, and that portion of the value which can be attributed to lands within the Chetco-Grayback Planning Unit, 1974.

Watershed	estimated value in watershed	percent watershed in Unit	estimated fish value in Unit
Chetco	$6,945,300	64.2	$4,458,900
Illinois	$4,953,600	33.4	$1,654,500
Pistol	$ 524,300	53.5	$ 280,500
Smith	$5,165,500	12.3	$ 635,400
Winchuck	$ 538,100	72.8	$ 391,700
totals	$18,126,800		$7,421,000

Anadromous fish must migrate from freshwater to the ocean and return to freshwater to spawn to complete their life cycle. Any restriction to passage of adults upstream, or juveniles downstream, may limit anadromous populations. Natural barriers to migration are present in several streams within the Unit, including Emily, Eagle, Cave, Grayback, and Sucker Creeks, but the inventory is incomplete. The barrier on upper Emily Creek stops upstream migration of salmon and steelhead and has been scheduled for removal feasibility study in FY 79.

Maintenance of water quality in streams throughout the Unit is of utmost importance to continued production of salmonids. Several existing laws and regulations extend a high level of protection to these waters. The 1967 session of the Oregon Legislature authorized the body now known as the Department of Environmental Quality to formulate general water quality standards below which Oregon's water will not be degraded. Special standards pertaining to the Rogue River basin (Section 40-080, Chapter 340, Oregon Administrative Rules Compilation) were adopted by that Department in 1969 and revised in 1976 which establish specific limits of coliform organism concentrations, dissolved oxygen concentrations, pH, turbidity, temperature, and dissolved chemical substances. All of these measures are of great value in protecting and improving the water resources of the area, and will be applied to all streams on National Forest land within the Planning Unit.

H. Hydrology-Watershed

The Chetco-Grayback Planning Unit contains portions of six drainages. The major and minor drainages and their respective areas within the Unit boundaries are summarized in Table H-1 and shown in Figure H-1.

Several stream gaging stations exist within or near the Unit boundaries. Most of the information gathered is through the U.S. Geological Survey and State cooperation (Table located in the Appendix). Gaging stations on the Pistol and Winchuck Rivers are recent installations. Several stream staff gages have been installed and stage-discharge relationships are being developed for low to moderate flows. Much of this was done during the drought of 1977 to obtain historical low flow data. Flow information is especially important when collecting turbidity and suspended sediment readings. Recording or maximum-minimum thermometers have been installed in many streams to obtain peak temperature and fluctuation data. Water resources data is very valuable for planning, environmental assessment, and desigr criteria.

Precipitation within the Planning Unit varies widely. In general, precipitation and streamflow decrease as one travels east across the Unit; however, other factors, including wind patterns and topography, also influence precipitation. Streamflow is influenced by a multitude of factors including precipitation, geology, topography, vegetation, soil, and in some cases, man or animal activities. Average annual water yield for the Chetco-Grayback Planning Unit is estimated at 90 inches, or about 3.5 million acre-feet. Rainfall averages slightly over 100 inches for the Unit. Figure H-2 is an Isohyetal (precipitation) Map for this Unit.

All streams within the Planning Unit have been classified under the U.S. Forest Service, Region 6 four level system, based on water use, fishery resources, and the potential effect each stream has on the quality of downstream waters. Class I and II streams are used either for domestic water supply, have important fishery resources, or flow sufficient water to have a major effect on other Class I and II streams (Figure H-3). Class III and IV streams are smaller, do not have important fishery resources, and on an individual basis, do not flow enough water to have a major effect on Class I and II streams. Stream mileage under Federal ownership in each allocation with the Planning Unit is listed in Table H-1.

Water quality and quantity greatly diminishes over the summer season. Stream temperatures, especially at lower elevations, greatly increase as flows decrease and solar heating rises. Higher algae levels and bacteria counts decrease the aesthetic properties of many streams. As flows recede in the summer, a greater percentage of water comes from ground water sources. Ground water has been in contact with soil and bedrock materials and contains more nutrients from weathering processes. The enriched summer flows along with higher stream temperatures support higher algal populations.

Suspended sediment and turbidity and temperature may be temporarily increased as a result of timber management. The impact is a function of the area disturbed, slope, soil erodibility, and the amount of remaining vegetation and litter. Vegetation and litter cover are perhaps the greatest deterrents to soil erosion processes. Cover reduces the detaching and transporting power of water as well as increases the soil structure and stability. For these reasons, most current timber harvest practices are oriented towards minimizing disturbance of the soil surface. Rapid revegetation of exposed soils is accomplished through tree planting as well as grass seeding and fertilization n critical areas.

In general, any practice which largely reduces or removes vegetation from an area will increase subsurface flows to streams during the growing season due to the reduction in transpiration. Quickflows as well as peak flows are usually significantly higher for clearcut areas than uncut areas during the first fall storms when maximum soil moisture differences occur. After forest soils are recharged, differences are greatly reduced but may still be evident. On a total watershed basis where timber is managed under sustained yield, flow changes are usually undetectable. Martin and Tinney (1962) found no detectable change in water yield when 64% of a large southwestern Washington watershed was logged at a rate of 2% per year. 1/ Harr et al. (1975) reported for coastal Oregon watersheds less than 30% cut and 4% roaded. They found no significant changes in peak, quick, delayed,

1/ Martin, I.L., and E.R. Tinney. 1962. Logging in West Coast Watershed Shows No Effects on Areas Water Yield. In the Timberman, May 1962. pp. 46-48.

or total flows. 1/ They also found that extensive logging (65% or more) and roading (12% or more) caused increased peak flows from relatively small, steep watersheds. 2/ Rothacher (1973) found higher peak flows in the fall, but winter peaks were largely unchanged. 3/ There has been relatively little research on the impact of large magnitude storm events (e.g., 1964 flood) on either managed or unmanaged areas.

Practices which tend to compact significant areas (e.g., tractor skidding) would likely also increase peak flows. Excessively hot slash fires (particularly in the fall when soil moisture is low) may also increase peak flows by altering soil structure - causing a reduction in infiltration. Practices which reduce infiltration potentially could reduce minimum streamflows, especially if the impacted area forms a large percentage of the watershed. The organic matter on the soil is also very important in holding and retaining water long enough so it can infiltrate.

Table H-1. Major and Minor Watersheds (SMU) Within the Chetco-Grayback Planning Unit.

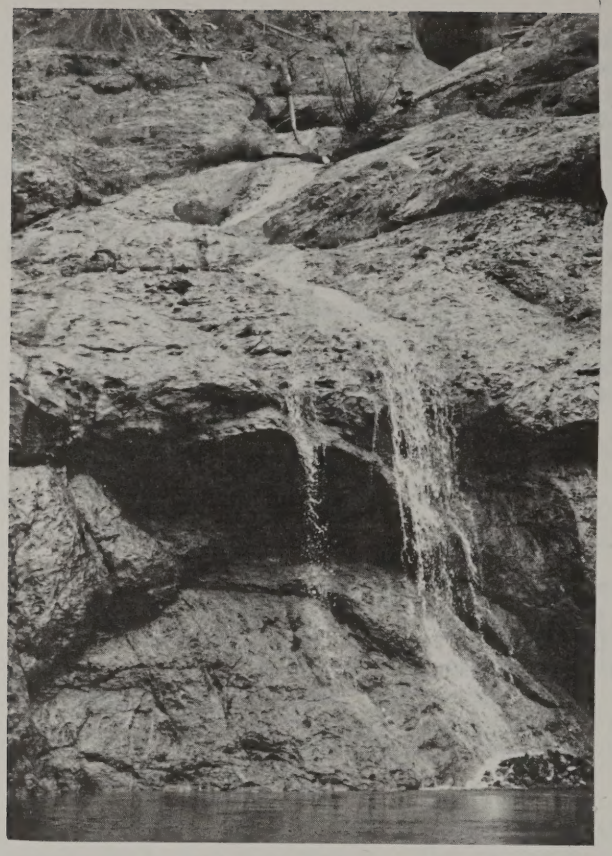
Watershed	Area (Sq.Miles) 1/	SMU 1	SMU 2	SMU 3	SMU 4	Total Miles
Illinois River:	(334.9)	82	102	282	735	1,201
Sucker Creek	61.9					
Althouse Creek	20.9					
East Fork Illinois	57.9					
West Fork Illinois	41.7					
Rough and Ready Creek	36.2					
Josephine Creek	42.9					
Other Illinois	73.4					
Smith River	88.7	12	18	29	166	231
Winchuck River	53.7	22	18	17	96	153
Chetco River	227.6	47	38	72	405	562
Pistol River	67.4	15	20	18	104	157
Klamath River	3.2	0	0	3	6	9
TOTAL	775.5	178	202	421	1,512	2,313

1/ Approximate. Includes all land within the Unit boundaries.

1/ Harr, R.D., W.C. Harper, J.T. Krygier, and F.S. Hsieh. 1975. Changes in Storm Hydrographs After Road Building and Clear-Cutting in the Oregon Coast Range. Water Resources Research Vol. 11, No. 3. pp. 436-444.

2/ Harr, R.D., et al. 1975. Ibid.

3/ Rothacher, J. 1973. Does Harvest in West Slope Douglas-fir Increases Peak Flow in Small Forest Streams? U.S. Forest Service Research Paper PNW-163. pp. 13.



Falls into Illinois River

Water seeps are common in the Grayback Creek drainage. Variations in chemical composition of granitic rock have allowed some areas to be deeply weathered while adjacent areas may have shallow soil over hard rock. This may lead to water concentrations in the more porous weathered material. Areas of steep slopes with slate bedrock tend to have numerous steep drainages trending down the slopes. These drainages are subject to debris avalanches when water and/or sidecast material is concentrated in them due to road construction. Debris avalanches also may sometimes occur in these drainages if the vegetation has been removed and water is concentrated from a heavy rain, even where roads are not present. Where water seeps are present, serpentinite may develop a red silty layer of soil over blue gray clayey and granular material which is of low strength. A double layer of water may develop, one on the silty surface layer and one in the granular material just above hard bedrock. These areas call for drainage measures, subgrade reinforcement or route relocation. Metavolcanic rocks, greenstone, weather to brown sandy soil and angular rock fragments. The fractured rock mantle is fairly stable if no downslope movement has taken place, because the angular fragments are wedged together. Water saturation in the weathered rock may lead to high pore water pressures and the weathered mantle may slide along the interface with the fresh rock beneath. Pockets of anomalously deep soil and weathered rock may slide when saturated if road construction or stream erosion has removed support downslope from them. Generalized or regional studies of soil or rock types are somewhat ineffective in providing useful specific information to road locators, because the problem areas are usually small and are often hidden from direct observation. Siskiyou National Forest geologists spend much of their time searching out these anomalous areas.

The 1967 session of the Oregon Legislature authorized the Department of Environmental Quality to formulate general water quality standards below which Oregon's waters will not be degraded. Limits on coliform bacteria, dissolved oxygen, pH, turbidity, temperature, and dissolved chemical substances within the Rogue Basin were adopted in 1969 and State-Wide Water Quality Management Plan of December 1976 (Section 40-080, Chapter 340, Oregon Administration Rules Compilation). All chemical and physical components regulated are important indicators for maintaining the water quality of the area.

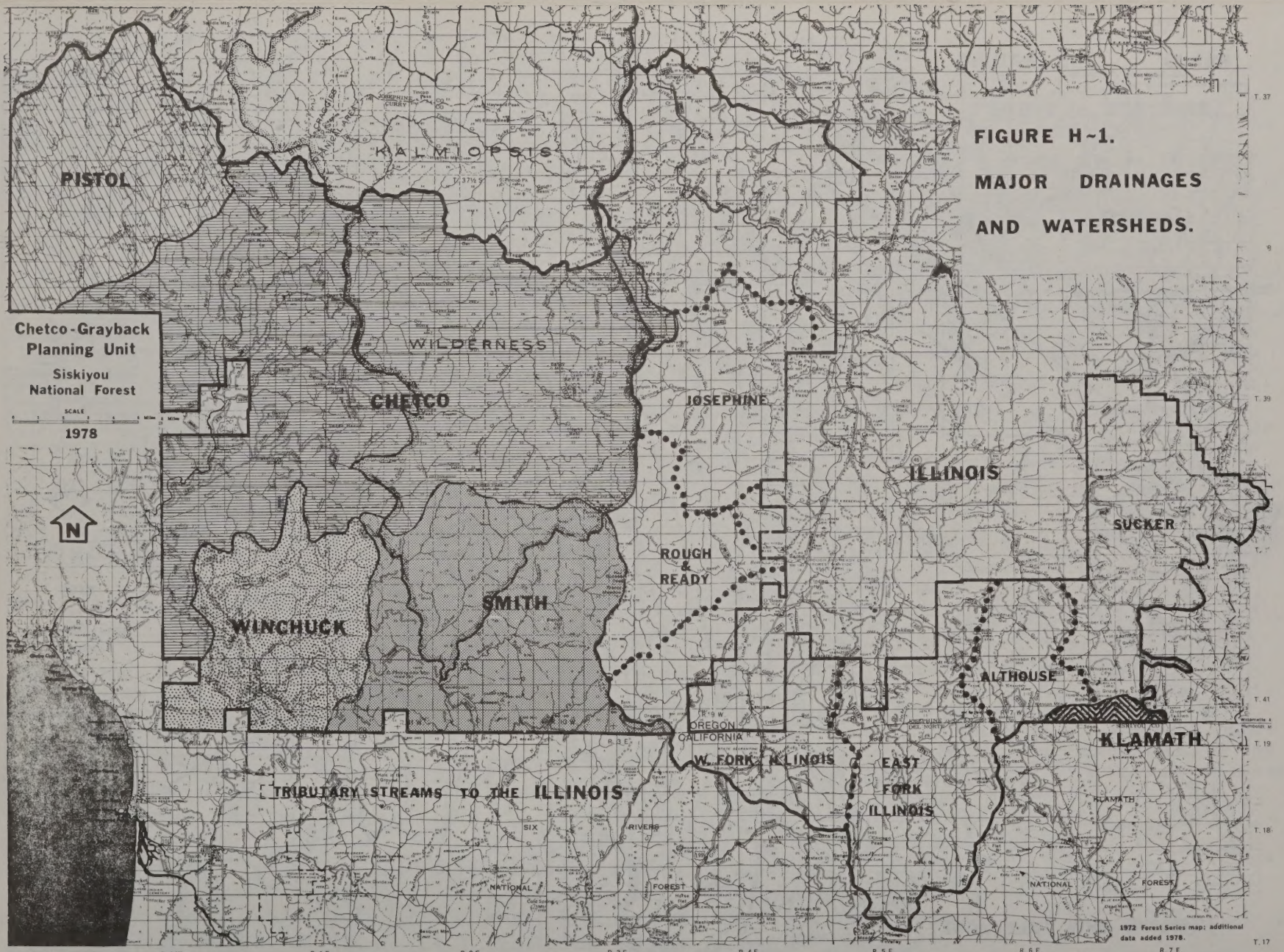
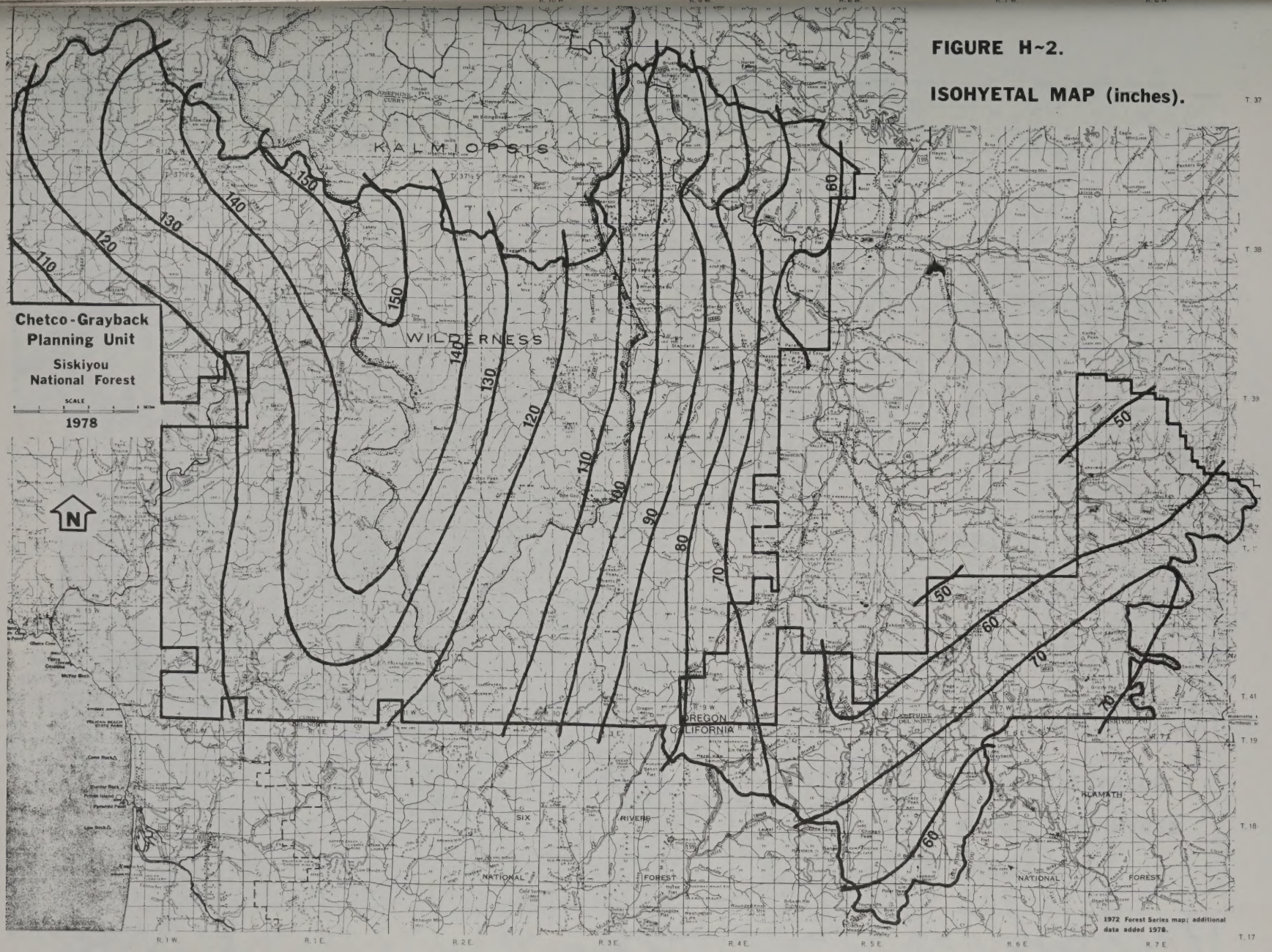
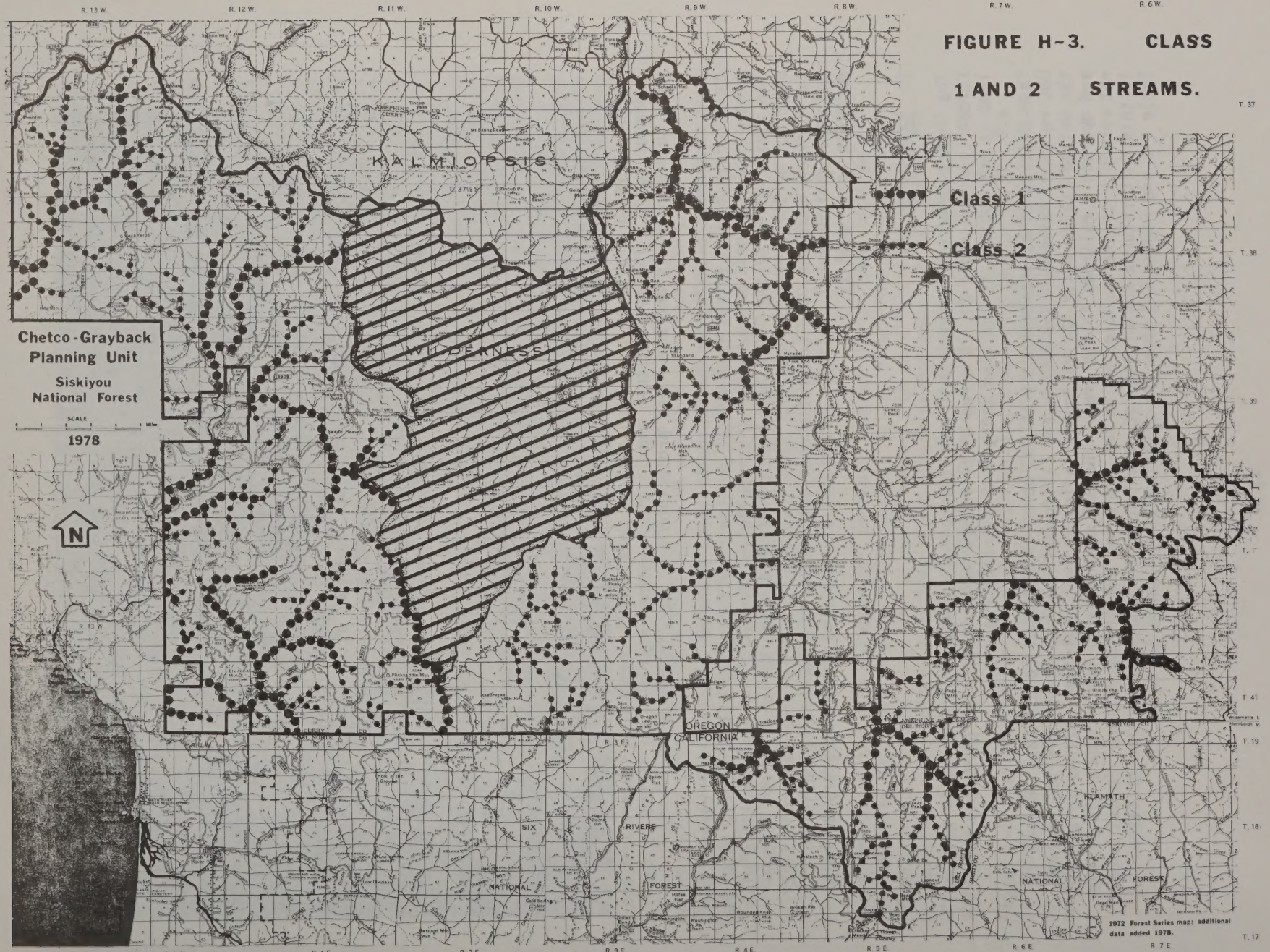


FIGURE H-1.

MAJOR DRAINAGES AND WATERSHEDS.


FIGURE H~2.
ISOHYETAL MAP (inches).
Chetco-Grayback
Planning Unit
Siskiyou
National Forest
SCALE
1978
N
KALMIOPSIS
WILDERNESS
OREGON
CALIFORNIA
SIX
RIVERS
NATIONAL
FOREST
KLAMATH
NATIONAL
FOREST
110
120
130
140
150
60
50
70
80
90
100
1972 Forest Series map; additional
data added 1978.


FIGURE H-3. CLASS 1 AND 2 STREAMS.
Class 1
Class 2
Chetco-Grayback Planning Unit
Siskiyou National Forest
SCALE
1978
KALMIOPSIS
WILDERNESS
OREGON
CALIFORNIA
SIX RIVERS NATIONAL FOREST
KLAMATH NATIONAL FOREST
1972 Forest Series map: additional data added 1978.

The Federal Water Pollution Control Act Amendments of 1972 (PL 92-500) has for its objective the restoration and maintenance of the chemical, physical, and biological integrity of the Nation's waters. In order to achieve this objective, it is the national goal that the discharge of pollutants into the navigable waters be eliminated by 1985 and, wherever attainable, that an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water be achieved by July 1, 1983.

Section 304 (e)(1) and 304 (e)(2) of FWPCA 1972 require the Administrator of the Environmental Protection Agency to issue information including (1) guidelines for identifying and evaluating the nature and extent of nonpoint sources of pollutants, and (2) processes, procedures, and methods to control pollution resulting from various activities. Accordingly, EPA has prepared reports covering some processes, procedures and methods to control pollution resulting from road construction, silvicultural, timber harvest, residue treatment and mining activities; pollution from subsurface excavations and salt water intrusion; methods for identifying and evaluating the extent of nonpoint sources of pollutants, including agricultural nonpoint sources; and silvicultural chemicals and the protection of water quality.

The EPA reports are intended to serve as guidelines for agencies designated under Section 208 of FWPCA 1972 and are not issued as binding regulations. They contain much useful information, some of which was contributed by the Forest Service, and are recognized as valuable aids for planning and administration.

The National Forest Management Act of 1976 also provides direction for protecting against watershed abuse. Timber harvesting will proceed only where watershed conditions are not irreversibly damaged and lands can be restocked within five years. Streams are to be protected against detrimental changes in temperature and sediment loads. The silviculture and logging systems used will be fitted to the site to insure soils and watershed protection and rapid regeneration.

Land management planning on the Chetco-Grayback Planning Unit has been carried out in accordance with established Forest policies pertaining to silviculture, watershed protection, and soil management. These policies recognize and are compatible with the stated goals of the FWPCA Amendments of 1972 and the National Forest Management Act of 1976. Executive Order 11514 (Section 2, 1970) places responsiblility to monitor, evaluate, and control agency activities on a continuing basis to maintain environmental quality. Activities are adjusted where necessary to help maintain water quality.

I. Land Ownership

The Chetco-Grayback Planning Unit contains approximately 464,712 acres of National Forest Land and about 24,725 acres of privately owned land. The privately owned land is not subject to the land management planning process.

This Unit contains approximately 55,000 acres of National Forest Land subject to O&C receipts formula. The Oregon and California Railroad lands reverted back to the United States after the railroads failed to meet their obligations to build and operate a railroad in the area. The O&C controverted lands return 75% of the net receipts to the counties while the remaining 88% of the National Forest Land in this Unit returns 25% of the net receipts to the counties in lieu of taxes. Table I-1 and Figure I-1 show the distribution of these lands.



The Siskiyou National Forest has had an active land exchange and acquisition program since 1958. Nearly all of the lands acquired have been along the Rogue River in conjunction with the federal Wild and Scenic Rivers program. In this Planning Unit, 104 acres were purchased along the Winchuck River in 1969, 601 acres were exchanged to private ownership in 1973, and 48 acres were acquired to Forest Service ownership by land exchange in 1977. An exchange currently in progress, if completed, will relinquish approximately an additional 200 acres to private ownership; the land to be acquired by the United States in this exchange is in another planning unit.

The purposes of the land exchange and purchase program are to consolidate public landownership into more compact and manageable units, reduce the amount of maintenance on public land lines and property corners, to provide the public with recreational opportunities that they might otherwise not have, and to aid in the protection of the watersheds and other resources within the Forest. Figure I-1 shows the proposed boundary of the National Forest.

Figure I-1 also illustrates lands in this Planning Unit which the Forest Service is interested in acquiring either now or in the future when the opportunity to do so is present, and National Forest Lands which are currently available to be exchanged to private ownership.

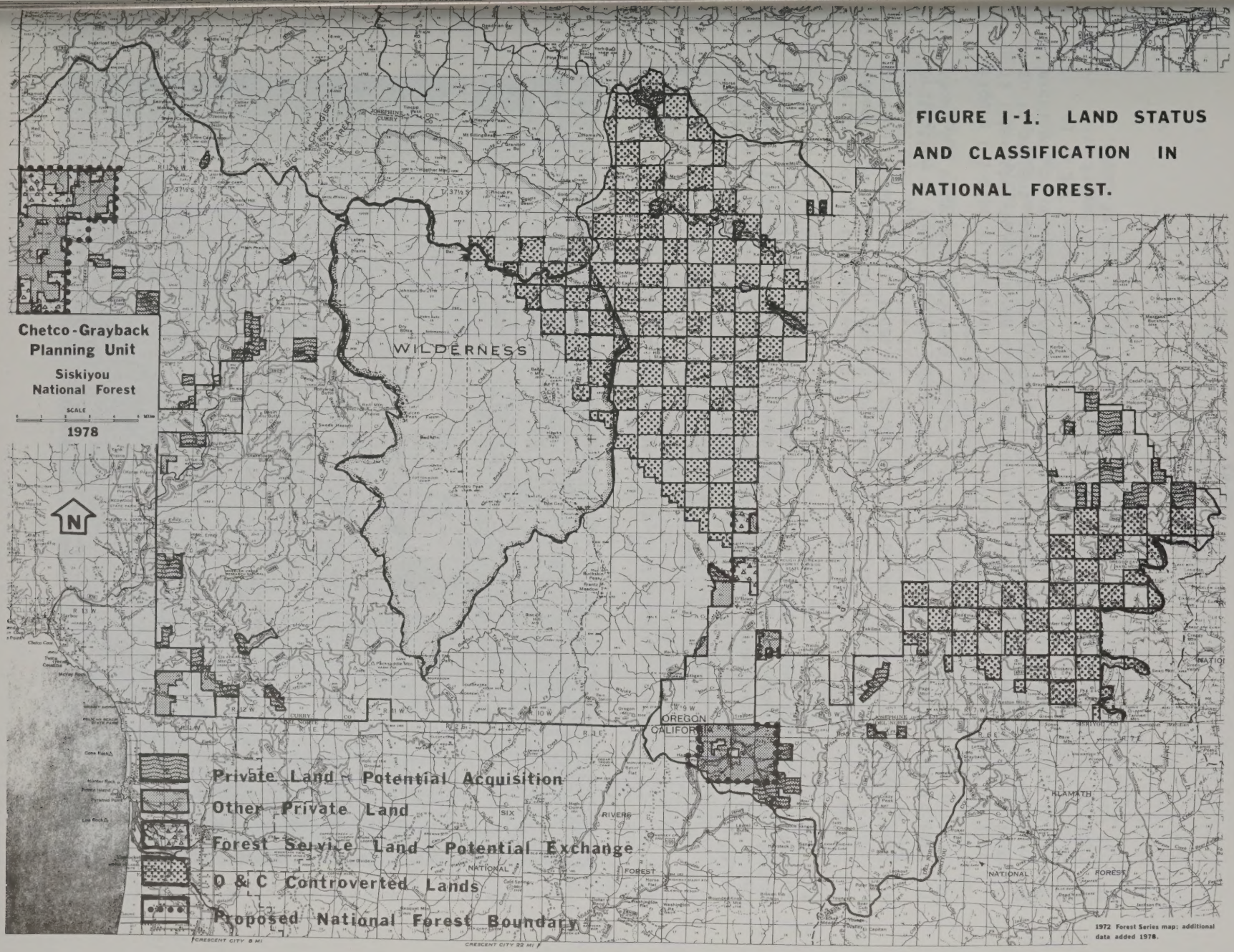


FIGURE 1-1. LAND STATUS AND CLASSIFICATION IN NATIONAL FOREST.

1972 Forest Series map; additional data added 1978.

Table I-1. National Forest Land subject to the O&C Formula in the Planning Unit (estimate).

Area	Roadless #	Area Acreage	O&C Acreage	% of Total O&C Land on Forest
No. Kalmiopsis	6176	12,966	2,740	1.6
Squaw Mtn	6179	7,399	600	0.3
Windy Valley	6180	13,491	0	0.0
Kalmiopsis Addition	6183	1,178	0	0.0
Mt. Emily	6184	5,947	0	0.0
Siskiyou	6701	8,294	0	0.0
Indian Creek	6702	950	180	0.1
No. Fork Smith	6707	950	0	0.0
Packsaddle	6708	9,315	0	0.0
So. Kalmiopsis	6709	110,229	17,900	10.4
Kalmiopsis Wilderness	NF042	88,675	1,760	1.0
Roaded Area		293,883	32,300	18.7
TOTAL Planning Unit		464,712	55,480	32.1

J. Range

Historically, range use on the Planning Unit has been by cattle. Old records and discussions with permittees, show that use has been cyclic. Around the turn of the century, up to 250 head of cattle grazed on National Forest lands. In recent years, the numbers had dwindled to about 100 head. Currently permit use has returned to about 250 head.

The variation in grazing capacity is primarily explained by two management factors: fire control activities beginning in 1905, and the beginning of timber harvest on National Forest lands in the early 1950's. Vegetation patterns began to change as destructive burning by incindarists, settlers, miners, and from natural causes was gradually brought under control. Timber stands and brush species began to occupy the sites where periodic burning had been necessary to retain the herbaceous and grass species as the dominant form of cover. Since timber harvest also causes plant succession to begin at earlier successional stages, forage production is again increasing.

Forage resources are divided into two general categories: grasslands, and transitory range. The grasslands are locally known as "prairies" and generally owe their existance to shallow soil depths. Transitory range exists for 5-20 years following timber harvest or fire - the time period depending on an area's productivity and the vegetative type. As sustained yield timber harvest progresses, new transitory forage areas are created while older units become less productive for forage as coniferous crown closure occurs. A continuous supply of forage will be available from transitory range where timber management is practiced.

It is estimated that transitory range in this Unit has a potential for producing as many as 3,360 animal unit months (AUM's) of forage. Additional forage use by wildlife has been considered. This assumes utilization of forage on slopes less than 45% and full timber utilization (on a sustained yield basis) of all commercial forestland. The potential tends to drop somewhat in proportion to the reduction

in commercial forestland acres available for timber management under various land management alternatives.

The estimated transitory range potential of 3,360 AUM's compares to the present permitted use of 1,350 AUM's.

Some conflict with other resource uses can be anticipated as grazing increases. Generally, the conflicts can be resolved through use of an appropriate grazing system and through seasonal controls. There should be little conflict with wildlife management since use of forage by cattle is only computed for slopes of less than 45% and the forage production on steeper slopes was not considered.

This conservative element, coupled with the fact that winter range is the critical element for wildlife population rather than summer range where most cattle use will occur, reduces the conflict.

Some hikers object to the presence of cattle. Since most hiking occurs along the Illinois River and the Kalmiopsis Wilderness where there is little or no contact with cattle, this should not be a serious conflict.

Grazing and reforestation are perceived by many foresters as conflicting. Utilizing a rest-rotation grazing system, and/or deferring use on newly planted units until new growth has hardened have been shown to reduce the conflict.

Increased utilization of the Unit's forage resource to provide red meat is possible. Use of native forage rather than grains for cattle production is a proven opportunity to provide red meat while conserving energy.



K. Recreation

The ocean, Kalmiopsis Wilderness, coastal rivers, fishing, Oregon Caves National Monument, and a small tributary population are the primary factors affecting recreational use in this Unit.

The renowned Oregon Coast attracts many thousands annually. Through the summer months cold northwest winds or fog are frequent along the shore. Travelers often go 3 - 5 miles inland along the coastal streams such as the Winchuck, Chetco, and Pistol Rivers, and commonly enjoy sunny weather, 60-70 degrees F. temperatures, and swimming in 60-70 degrees F. streams. This weather contrast contributes heavily to recreational use on the West Side of the Forest. During fall and winter months, quality steelhead and chinook salmon fishing similarly attract the public.

Compared to other Wildernesses, the Kalmiopsis is lightly visited. Its unusual flora and the headwaters of the Chetco River, are its primary attractions. Its primary restrictions on use are the rugged, broken, topography, hot and dry summer weather, and difficulty of travel. Nevertheless, its national designation as Wilderness and its inherent qualities cause it to be a central factor for the management of recreational use on the Planning Unit.

Another factor affecting recreational management is the National Park Services, Oregon Caves National Monument. The Monument is surrounded by the Siskiyou National Forest. Therefore, the 200,000 annual visitors pass through the Forest. Grayback Campground, located on the route to the Monument is the heaviest used campground on the Forest. The National Forest area receives substantial use from the Grants Pass-Medford area.

Land forms and character also have a bearing on the area's desirability for recreational use. The areas adjacent to the coast are relatively verdent, rolling, low elevation, and productive terrain. The area south and east is rolling, quite barren, but interesting, botanically, due to its serpentine-peridotite geology. These characteristics portray a very harsh environment. The eastern portion of the Unit is productive, rises higher in elevation, with strongly defined ridges and draws. It provides a diversity in elevation, cover types and uses.

About 49 percent of the Kalmiopsis Wilderness (88,675 acres) lie within the Planning Unit. Most of the Wilderness use occurs within the portion of the Kalmiopsis that lies within the Planning Unit.

Table K-1. Planning Unit Recreational Use by Activities. 1/

Activity	Visitor-Days Use
Motorized Travel	111,000
Camping and Picnicking	196,000
Water Sports	26,000
Fishing	35,000
Hunting	15,000
Hiking, Riding, Climbing	14,000
Gathering Forest Products	4,000

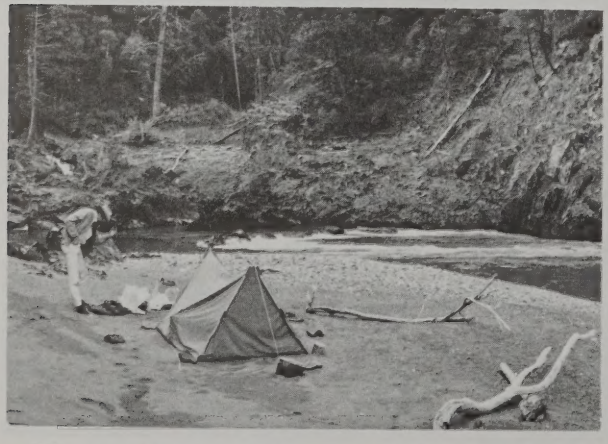
Activity (cont'd)	Visitor-Days Use
Nature Study	1,000
Winter Sports	2,000
Viewing Scenery	1,000
Other	9,000
Total	414,000

1/ Source: R.I.M., Siskiyou National Forest for Illinois Valley and Chetco Ranger Districts. The Planning Unit does not conform exactly to these administrative units. The statistics are judged to be the best available representation of Planning Unit use.

As shown in Table K-1, recreational use in 1975 amounted to 414,000 visitor-days (a visitor-day is a 12-hour day of recreational use and can be one person for 12 hours or 12 people for one hour, etc.). Between 1970 and 1975 recreational visitor-days increased from 257,000 to 414,000, a 60% increase, or about 12% increase per year. During this interval use at developed campgrounds has actually declined by 8000 visitor-days. The reason for the decline is partly explained by the closing of one campground installation and better traffic controls in others that limit use to the defined camp units. Other factors include the desire by many to camp in unstructured situations where rules are fewer.

Recognition of this trend and the realization that our greatest recreational asset is simply the vast size of the National Forest has led to a policy in the Forest Service to emphasize dispersed forms of use. Dispersed recreation includes all those forms of recreation that occurs outside of constructed recreational facilities such as driving for pleasure (one of the greatest uses), hiking in a Wilderness, fishing, and many others. Future campground construction will be limited on this Unit. However, commercial and State-owned facilities along the coast and commercial facilities along highways adjacent to the Unit are expanding to provide for the needs of RV (recreational vehicle) campers.

The policy emphasizing dispersed types of use agrees with recent "Oregon Outdoor Recreation Demand Bulletin" 1/ demand projections for Josephine and Curry counties. The projections do not include use by out-of-state people. This use is substantial in the Planning Unit and is a direct result of the area's nationally known features, and the proximity of California. SCORP also shows that Oregonians have shifted their recreational pursuits to save fossil fuels because of the energy crisis. Recreational travel has



Dispersed Recreation on Illinois River

1/ Technical Document I of Statewide Comprehensive Outdoor Recreation Plan - Parks and Recreation Branch, Department of Transportation, September 1976.

decreased. This factor will affect use patterns in S.W. Oregon since our tributary population is small. This factor indicates Wilderness and other forms of back-country use will probably grow at a percentage rate

Table K-2. Planning Unit Recreation Facilities.

Site	Facility Type	Capacity (People At One Time)
Winchuck	Campground	80
Long Ridge	Campground	10
Little Redwood	Campground	80
Red Mtn. Prairie	Campground	10
Store Gulch	Campground	15
Sourdough	Campground	25
Grayback	Campground	220
Cave Creek	Campground	80
Bolan Lake	Campground	40
Tannen Lake	Campground	15

The Siskiyou Forest Off-Road Vehicle (ORV) Management Plan dated September 29, 1977 was developed in accordance with the February 8, 1972 Executive Order 11644. It outlines policies and procedures which will ensure that the use of off-road vehicles (ORV's) will be controlled and directed to protect the resources, promote the safety of users, and minimize conflicts among the various uses. On the Chetco-Grayback the areas to be closed to protect range productivity, wildlife, plant communities, and sensitive soils are the following:

Bigelow Lakes Area and Trail
Wheeler Creek Research Natural Area
Red Mtn Prairie
Long Ridge Area
High Prairie
Kerby Flat Area
Josephine Creek
Kalmiopsis Wilderness
Pyrimid Rock Area
Red Flat

All closures and restrictions are signed at the area to inform the public. An Environmental Analysis Report for Off-Road Vehicle Management was issued February 25, 1977.

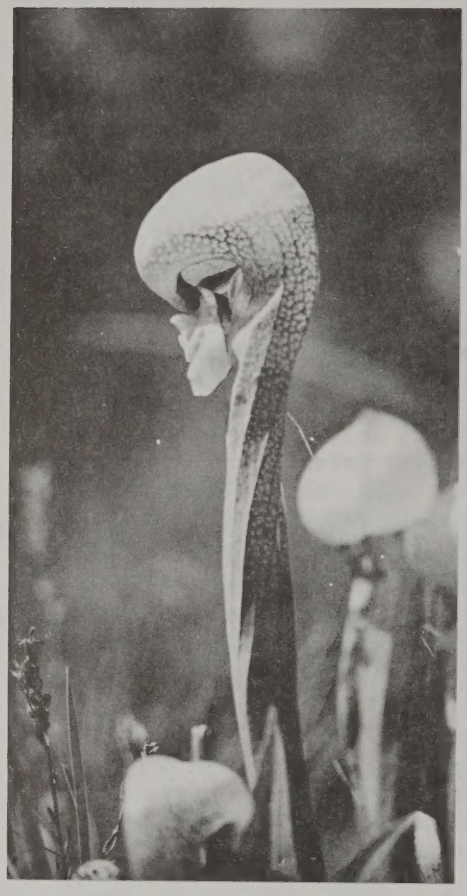
L. Research Natural Area

Research natural areas are natural ecological reserves designated for the preservation of unique ecosystems, habitat, or organisms for research and educational purposes. The objectives for these areas are as follows:

1. To preserve examples of all significant natural ecosystems for comparison with those influenced by man.

2. To provide educational and research areas for ecological and environmental studies.

3. To preserve gene pools for typical, rare and endangered plants and animals.



California Pitcher Plant
(Darlingtonia californica)

The 334 acre Wheeler Creek Natural Area reserves an example of Redwood - Douglas-fir forest near the northern range of the redwood species.

The Hoover Gulch RNA has been proposed to reserve an example of a mixed-evergreen forest (Douglas-fir - evergreen hardwoods). An establishment report is currently being prepared for this area. The final report will be reviewed by the Forest Service for future establishment.

Another area of interest to the RNA committee is the proposed Lemingworth Gulch RNA. Although the boundary has not been finalized, the RNA committee identified priority forest type cell needs that the area could fulfill. The needs are recognized in Table 53 of the report "Research Natural Area Needs in the Pacific Northwest" 1/ and are as follows:

" 8. Mixed-evergreen forest (Douglas-fir and evergreen hardwoods).
9. Tanoak-Madrone forest.
11. Knobcone pine.
16. Jeffrey pine-grass on serpentine soils at high elevation.
17. Port-Orford cedar - Douglas-fir on serpentine soils.
18. Serpentine vegetation matrix and normal soil island with good representation of contrasts."

The following aquatic cell need (Table 54 of the above mentioned report) may also be filled:

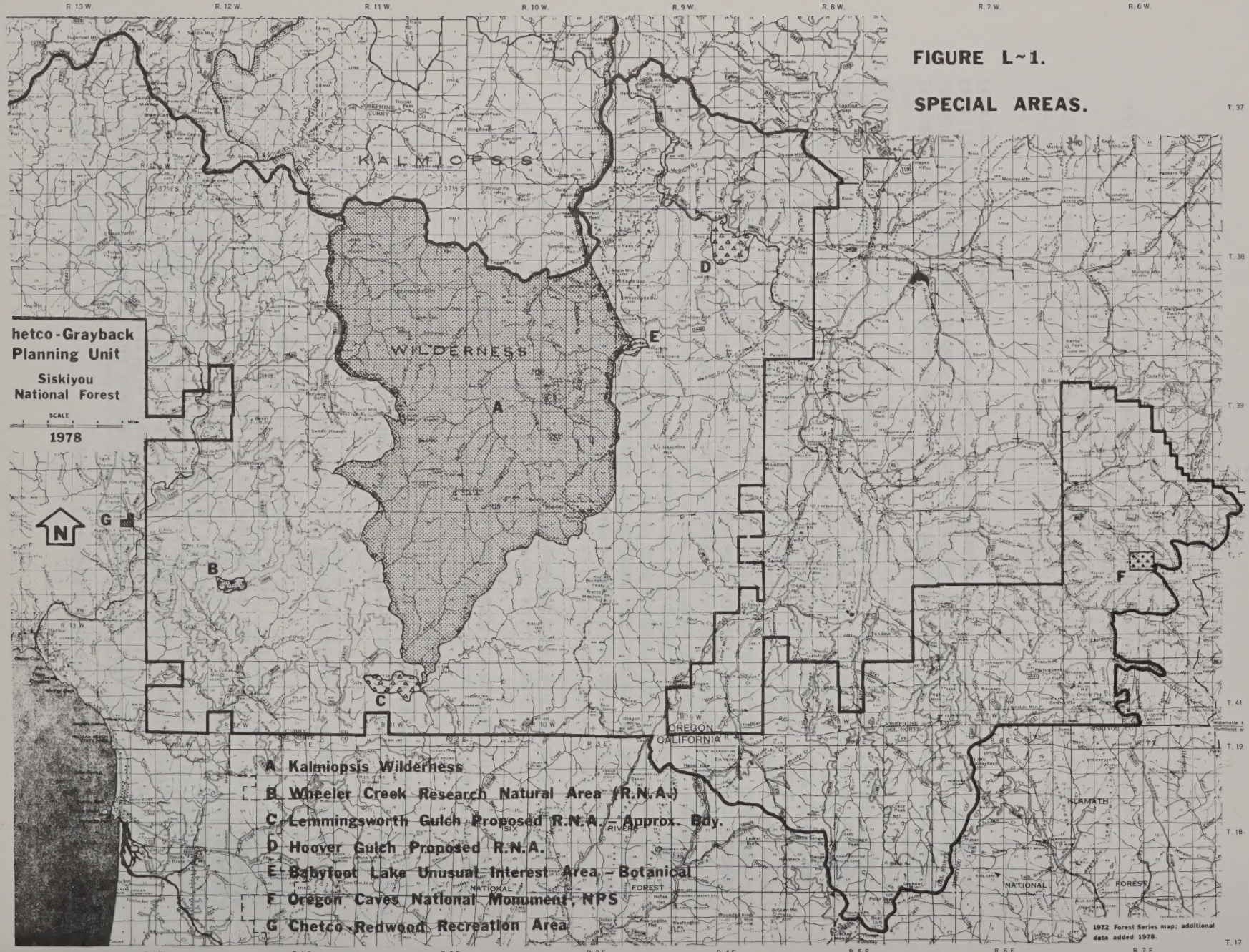
"10. Stream drainage in serpentine at mid- to high-elevation."

The general location of the area is south and east of Packsaddle Mtn in T.41S. R.11W. which includes the drainage flowing into the North Fork Smith River. Tentatively, it would follow a topographic boundary on both sides of this drainage.

1/ Dyrness, C.T., J.F. Franklin, Chris Maser, Stanton A. Cook, James D. Hall, and Glenda Faxon. 1975. Research Natural Area needs in the Pacific Northwest, a contribution to land-use planning. USDA For Svc Gen. Tech. Rep. PNW-38, 231 p.

FIGURE L~1.

SPECIAL AREAS.



M. Roadless Areas

The Roadless Area Review and Evaluation (RARE) began in 1972 and provided the first National look at possible areas for wilderness in the National Forest system. The process provided a uniform set of standards to evaluate roadless areas of 5,000 acres or more and smaller areas adjacent to existing wilderness. In 1977, the inventory was revised by adding new areas and areas adjacent to previously identified roadless areas. These areas have more irregular boundaries that allow peninsula-shaped roaded intrusions rather than following more significant topographic features that excldue indentations. The total inventoried roadless area for the Forest is 340,133 acres.

This new program was referred to as RARE II. The objectives of RARE II were threefold:

1. Identify and propose for immediate classification roadless and undeveloped areas that can contribute to a quality National Wilderness Preservation System.

2. Determine which roadless areas should receive no further consideration as wilderness but should be devoted to the full range of multiple use resource management.

3. Identify areas that require further planning before a decision can be made.

These areas and other unroaded areas which were identified during the land management planning process were evaluated for wilderness attributes and various alternatives were analyzed for environmental, social and economic effects. These areas are shown on Figure M-1 and are listed below in Table M-1. The wilderness attribute rating system evaluated the roadless areas for natural integrity, apparent naturalness, outstanding opportunities for solitude, and primitive recreation. In addition, the system provides for rating four supplemental wilderness attributes: Outstanding ecological, geological, scenic, and historical features. They are supplementary because their presence is permissible but not required by the Wilderness Act. The system also provides for ratings of adjusted natural integrity and adjusted apparent naturalness. These ratings reflect improvement in the natural integrity and apparent naturalness scores if boundaries of the area were adjusted, if possible, to remove serious intrusions. The attribute ratings and resource data for each roadless area in this Planning Unit are listed in the Appendix.

The underlying theory behind the wilderness attribute ratings is that compiling objective and descriptive data on components of all the wilderness attributes will facilitate consistent ratings of the wilderness attributes by both resource professionals and the public.

Table M-1. List and Acreage of Roadless Areas.

Area Name	RARE II No.	Acreage
No. Kalmiopsis	6176	13,120
Squaw Mtn	6179	7,399
Windy Valley	6180	13,491
Kalmiopsis Addition	6183	1,178
Mt. Emily	6184	5,947
Siskiyou	6701	8,294
Indian Creek	6702	950
No. Fork Smith	6707	1,135
Packsaddle	6708	9,315
So. Kalmiopsis	6709	110,229
TOTAL		171,058
Kalmiopsis Wilderness	NF042	88,675
GRAND TOTAL Roadless Area		259,733

Certain intrusions into the "roadless areas" exist. These are largely evidence of old mining activity and roads. The roads were either missed in the original inventory or were thought to be mere "cat tracks" where no substantial cutting or filling was done during their construction.

A brief description of the character and values of the roadless areas follows. The chief values of the east part of 6709 are mineralization and botanical interests that are related to the peridotite-serpentine geology. Vegetation is generally characterized by sparse to dense grass and shrub cover with a sparse coniferous overstory. Primary tree species are knobcone pine, Jeffrey pine, and sugar pine. Primary shrub species include manzanita, huckleberry, oak, ceanothus, azalea, and rhododendron. Grasses include Idaho fescue, stipa, and California oatgrass. The "roadless" areas include significant site disturbance in the form of roads and mining prospects. The roads, which are mostly due to mining activity revert to natural vegetation exceedingly slowly due to the relative sterility of the soil. Topographic form is mostly flat to gently sloping ridges sharply disected by four principle streams.

The areas 6180, 6708, 6183, 6184 and the west part of 6709 are grouped due to similarities. Generally the areas lie within the marine sediments which are associated with the most productive soils on the forest. Some serpentine intrusions occur which are unproductive. Vegetation is dominated by Douglas-fir and tanoak. Terrain is rolling to broken and steep. Soils tend to be unstable near the creeks. Few roads and/or timber harvest areas exist. A description of the individual roadless areas can be found in the Appendix.

RARE II has four main phases:

1. Inventory - This phase is now complete. It consisted of taking a fresh and complete look at the National Forest System to develop a new inventory of roadless and undeveloped area. This new inventory updated the inventory completed in RARE I for the West, including Alaska. It also included an inventory of National Forest undeveloped areas in the Eastern United States and on National Grasslands.

2. Review and Evaluation of Individual Areas - This phase involved the collection of resource, social, and economic data on each of the roadless areas. Such information was summarized in mathematical and narrative form and has been used to develop land allocation alternatives and to compare one roadless area against another in terms of their wilderness potential.

3. Draft Environmental Statement - A draft ES was prepared after the information in Phase 2 was collected. The Forest Service intent is to present a very broad range of alternatives for public scrutiny. The Draft Environmental Statement was made available to the public on June 15, 1978.

4. Final Environmental Statement - This last phase in the process will consist of preparation of a final ES which will recommend to Congress the areas that should be designated as Wilderness and those that should be devoted to other uses.



Roadless Area No. 6701 (Siskiyou)

N. Soils

Soils are a fundamental component of the environment. All renewable surface resources of the National Forest are dependent upon soil, which is a non-renewable resource. Soil along with soil related features, such as subsoil moisture, duff cover, topography and bedrock determines the lands inherent productivity and also its susceptibility to incur effects which reduce this productivity. Forest resource management is directed towards the conservation and wise use of the soil resource in order to ensure high-level, sustained yields of water, timber, recreation, wildlife and forage.

Soils in the Unit were mapped during the Soil Resource Inventory (SRI). The objective of the SRI is to provide basic soil, bedrock, and landform information in a form useful to the Land Manager and as an aid to multiple use management.

A wide range of soil characteristics are found in the Unit. Large variations exist in natural stability, surface erosion potential, soil depth, texture, drainage, duff thickness and moisture content. The nature and complexity of the soils in the Unit influence such management decisions as harvest systems, road access, slash disposal and regeneration.

The two processes which have the greatest effect on the soil resource on the Siskiyou National Forest are surface soil erosion and mass wasting. Surface erosion causes a loss of soil productivity and is a source of stream sediment. Surface soil erosion potential is highest on steep rugged terrain where surface soil cohesion is low and litter layers are thin.

Mass wasting commonly occurs along geologic contacts, fault zones, highly fractured parent materials, in areas of moisture accumulation and in areas of stream channel cutting of toe slopes. Unstable soils are generally deep wet and clayey.

Soil depth is an important management consideration in this Unit. As compared to a deep soil, a shallow soil stores less moisture and therefore has less moisture available for vegetative growth. A shallow soil has limited rooting depth which may reduce growth and contribute to blowdown.

Soil texture is a characteristic that has a large influence on both soil productivity and its response to management. Soils in the Unit can be lumped into three textural units: 1) clayey (fine and moderately fine texture), loamy (medium textured), and sandy (moderately coarse-to-coarse textured). On soils of equal depth a sandy soil as compared to a clayey soil would have less moisture holding capacity, dry out faster, be usually more stable, less compactible, less fertile, and more erodible.

The amount of soil moisture and the length that it is retained influences productivity, species adaptability, regeneration, and susceptibility to compaction and sedimentation.

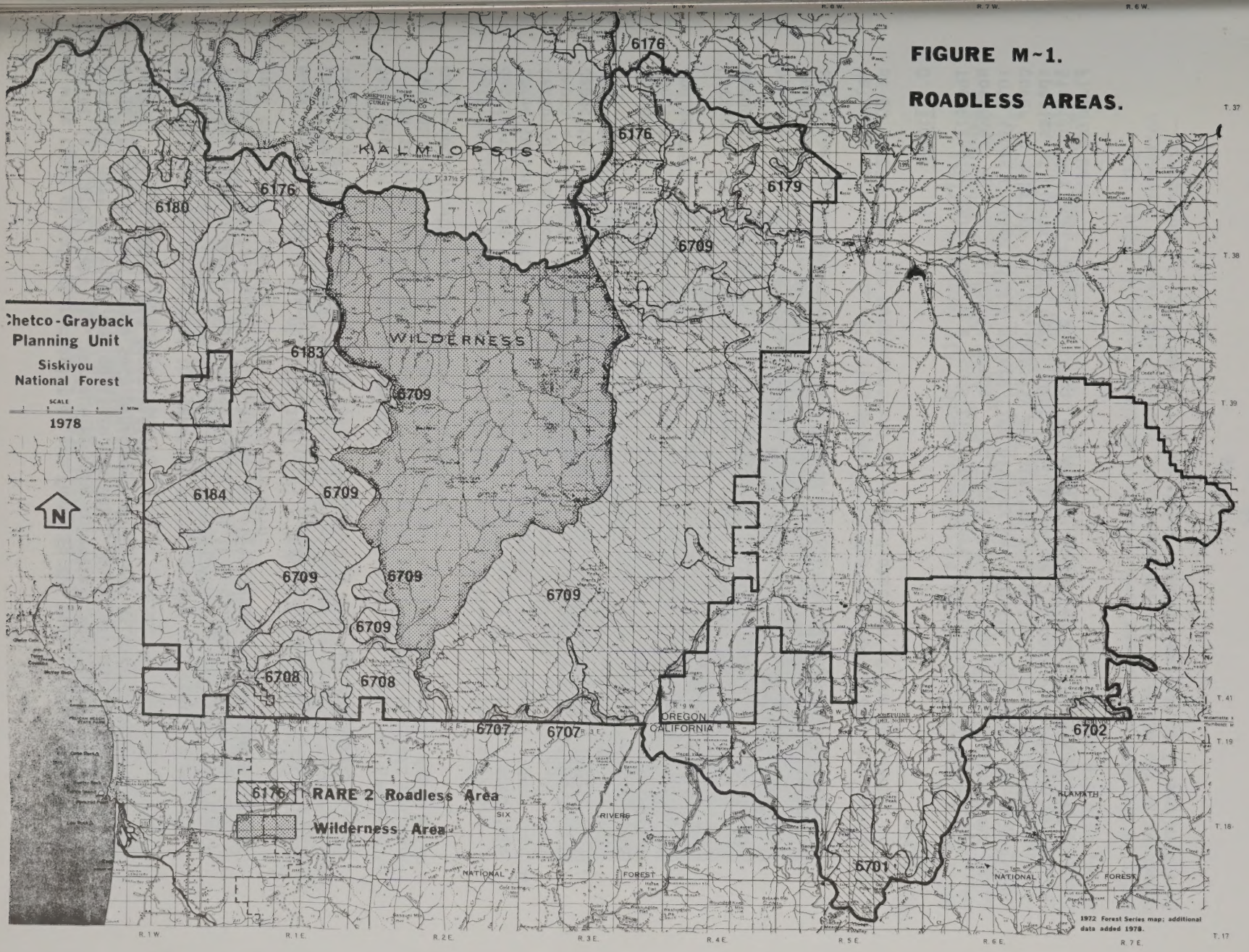
Litter on the soil surface serves several important roles including shading, reducing rain drop impact, and slowing overland flow.

Organic matter also plays important roles in both the physical and the chemical properties of the soil. These properties control water movement, nutrient status, available plant water storage, soil stability, and the general life of the soil.

Valuable soil resources will also be protected and restored through implementation of EO 11988 Floodplain Management and EO 11990 Protection of the Wetlands.

O. Timber

The Planning Unit lies in a transition zone where species common to the Pacific Northwest and to California merge. The large variation in climatic conditions and soil types coupled with a severe fire history has greatly influenced the vegetation cover in relation to site, density and species composition. Many different species of plants exist here. Over 1,400 plant species have been identified by Siskiyou National Forest personnel and many of these can be observed on this Planning Unit.


FIGURE M~1.
ROADLESS AREAS.
Chetco-Grayback
Planning Unit
Siskiyou
National Forest
SCALE
1978
N
KALMIOPSIS
WILDERNESS
6176
6176
6176
6180
6179
6709
6183
6709
6184
6709
6709
6709
6709
6709
6708
6708
6707
6707
6702
6701
OREGON
CALIFORNIA
6176 RARE 2 Roadless Area
Wilderness Area
SIX
RIVERS
NATIONAL
FOREST
KLAMATH
NATIONAL
FOREST
1972 Forest Series map; additional
data added 1978.



Douglas-fir Forest with Two White Pine in Foreground

Douglas-fir is the primary sawtimber species on this Planning Unit. It grows in association with several coniferous species: sugarpine, Port-Orford-cedar, western hemlock, white fir, incense-cedar, knobcone pine, Jeffrey pine, ponderosa pine, white pine, western redcedar, Brewer spruce, grand fir, Shasta red fir, Pacific yew and redwood. Associated hardwoods include: tanoak, red alder, Pacific madrone, golden chinkapin, canyon live oak, California live oak, white oak, black oak, willow, bigleaf maple, dogwood, and Oregon-myrtle.

These species make up the Forest timber types existing today. A past history of fires in the Unit has left a diverse pattern of vegetative cover. According to reports passed on by early settlers, fire was a convenient way to clear the ground for prospecting. Packers and freighters set fires to make travel easier and Indians used fire in warfare. Fires were set to clear land, to kill woodticks, to improve grazing, or used just because it seemed to be a good idea. Because of these burning practices or the lack of effective control methods during the early history of the Forest, thousands of acres were repeatedly burned. Tanoak, which has been known to sprout and grow from 4 to 12 feet in one season, occupied many of the sites immediately after the burn. As a result large stands of tanoak now exist throughout the western portion of the Unit. Other partially burned areas subsequently evolved into various stages of plant succession.

These timber type acres are estimated on Table O-1. The acres were determined by planimetering the areas on a forest type map. Volumes were estimated by using inventory plots, aerial photos, and timber harvest units in similar types in the surrounding area.

The productivity of the land is measured by its site index which is a relationship between height and age. High site index measurements are directly dependent on the site quality or physical characteristics of the forest area such as soil, rainfall, temperatures, altitude, slope and aspect. To what degree each physical characteristic influences the growth cycle is not completely known. However, it is known that favorable combinations of these factors are essential for high productivity.

The average site index for this Unit is 100. By knowing the site index we can predict the yield on a given fully-stocked acre under intensive management conditions. Based on site index tables approximately 26% of the commercial land on this Unit is below normal stocking, indicating that the land is not growing at its full capacity. Some of these areas have low stocking and low volume commercial or merchantable conifers with a hardwood understory. Some contain pure stands of tanoak or other hardwoods. Figure O-1 shows the distribution of the timber types on the Planning Unit.

Table O-1. Estimated Acreage and Conifer Volume by Timber Type.

Forest Timber Type	Acreage 1/	% Acreage	Volume (MBF)	% Volume
Large old growth sawtimber over 21 inches DBH - well stocked.	24,413	6.5	1,025,046	22.6
Same as above except medium stocked.	57,469	15.2	2,021,378	44.6
Same as above except poorly stocked.	74,497	19.8	657,595	14.5
Small sawtimber 11 to 21 inches DBH, well and medium stocked.	36,946	9.8	831,387	18.3
Other coniferous stands including harvest units.	59,981	16.0	Unest.	Unest.
Scrub pine areas (knobcone, white, lodge pole).	39,953	10.6	Unest.	Unest.
Hardwood stands.	33,281	8.9	Unest.	Unest.
Brushland and grasslands.	13,782	3.7	0	0
Non-Commercial rocky areas and cliffs.	35,715	9.5	0	0
	376,037 2/	100.0	4,535,406	100.0

1/ Acres as of 1967.
2/ Total does not include 88,675 acres of Kalmiopsis Wilderness.

The Unit contains an estimated 4.5 billion board feet of merchantable timber volume. It contributes approximately 58 million board feet to the annual programmed harvest. Since 1972 the harvest areas have been confined to the land base (44 percent) outside the wilderness and roadless areas. The estimated annual gross value (selling value) is 31.8 million dollars based on Fiscal Year 1977 and 1978 timber sales. This includes an overbid of approximately 7.0 million dollars. The overbid is the difference between the advertised rate and the high bid rate of the purchaser. Table O-2 and Figure O-2 shows the distribution of volume on the Planning Unit by area.

Table O-2. Acreage and Volume Estimates Within the Planning Unit.

RARE II No.	Area	Acres	Volume (MBF) 1/	Volume/Acre (MBF)
	Roaded Areas:			
	Pistol	54,598	768,561	14.1
	Winchuck	40,619	761,825	18.8
	Sixmile	25,857	69,811	2.7
	Grayback	83,905	1,599,048	19.1
	Subtotal	204,979	3,199,245	15.6
	Inventoried Roadless Areas:	171,058	1,336,161	7.8
NF042	Kalmiopsis Wild.	88,675	3/	-
GRAND TOTAL		464,712	4,535,406	9.8

1/ Volume was estimated from timber type maps.
2/ Excludes an estimated 354,568 MBF of reserved volume in Kalmiopsis Wilderness.

The old-growth currently existing on the unit ranges in age from 160 to 400 years old. Most trees in this age class, which is the bulk of the programmed harvest, show signs of overmaturing to the point that their growth has slowed, they are vulnerable to wind damage, and they are very susceptable to insects and disease attack; however, younger trees are usually more vigorous even in their natural unmanaged conditions.

The optimum management conditions of a timber stand are controlled by the number of trees and the desired growth rate. Stocking level control is achieved by removing the excess trees which are diseased, damaged, or suppressed. By maintaining a given number of dominant and codominant trees on the area the expected yield can easily be predicted for a given period of time; therefore, if the stand is controlled from the time of establishment, more timber can be produced than could be under natural forest conditions.

Generally, if areas are incapable of producing at least 20 cubic feet per acre of annual growth, it is considered unproductive forestland. This land, plus poorly productive land (50 cubic feet/acre/year or less), comprises about 29.5 percent of the acres in the Unit. The land in the 20-50 cubic feet/acre/year will be managed over a 160 year rotation or until culmination of the mean annual increment while the remainder of the coordinated resource management area will be managed on approximately a 90 year rotation.

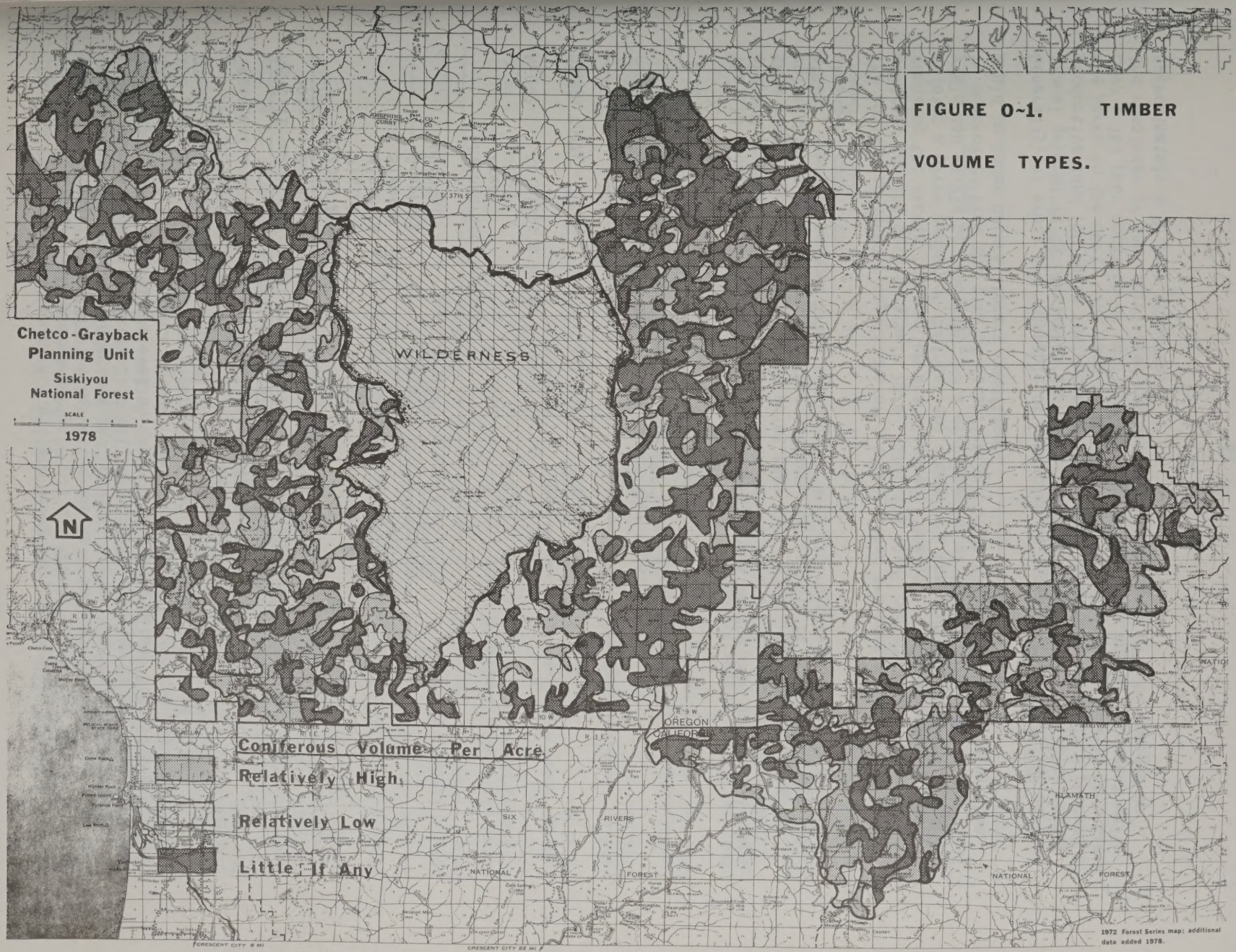
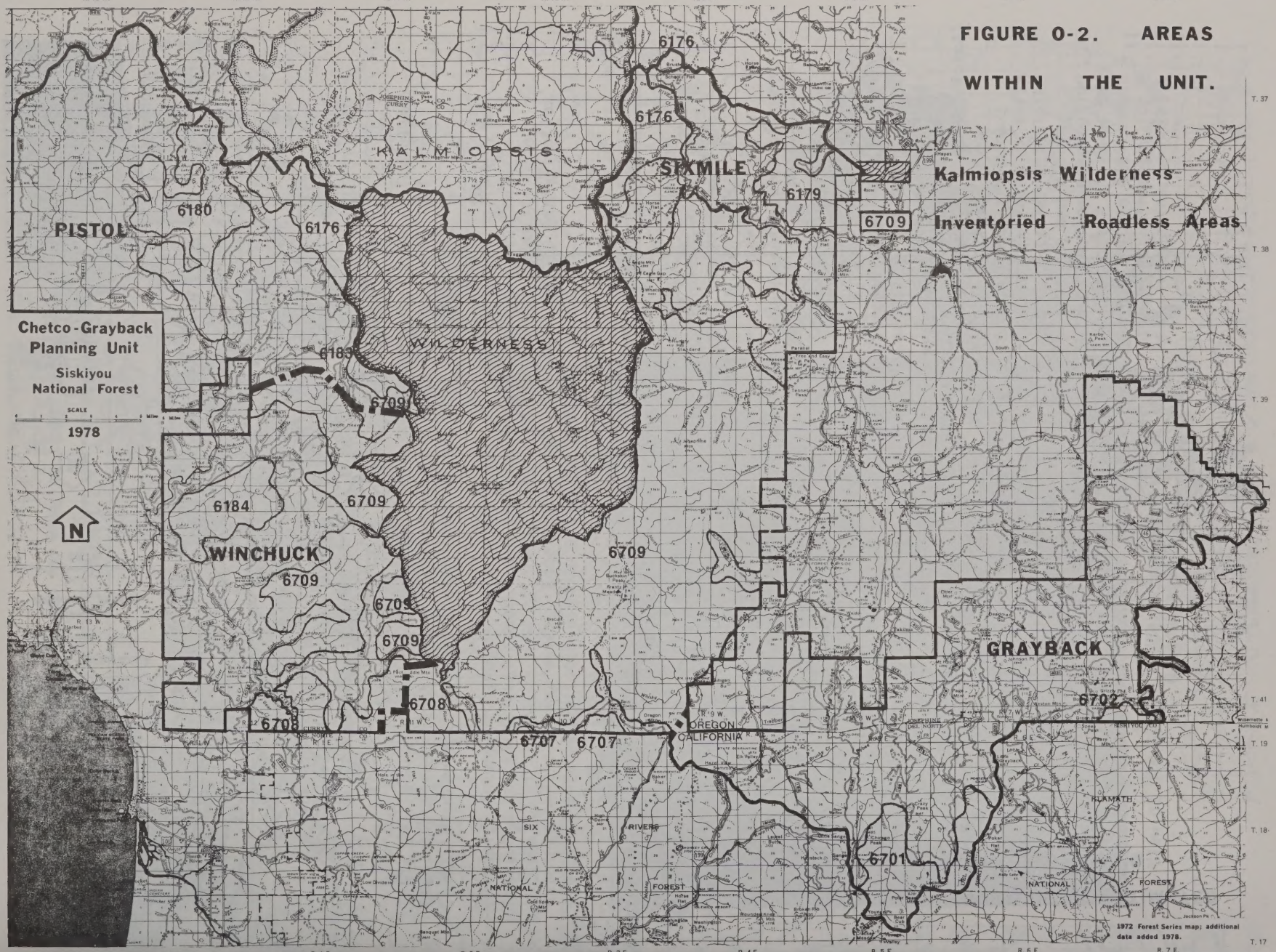


FIGURE O-1. TIMBER VOLUME TYPES.


FIGURE 0-2. AREAS WITHIN THE UNIT.
Kalmiopsis Wilderness
6709 Inventoried Roadless Areas
Chetco-Grayback Planning Unit
Siskiyou National Forest
SCALE
1978
N
KALMIOPSIS
WILDERNESS
PISTOL
SIXMILE
WINCHUCK
GRAYBACK
6176
6180
6179
6183
6709
6184
6708
6707
6702
6701
OREGON
CALIFORNIA
SIX RIVERS NATIONAL FOREST
KLAMATH NATIONAL FOREST
1972 Forest Series map; additional data added 1978.

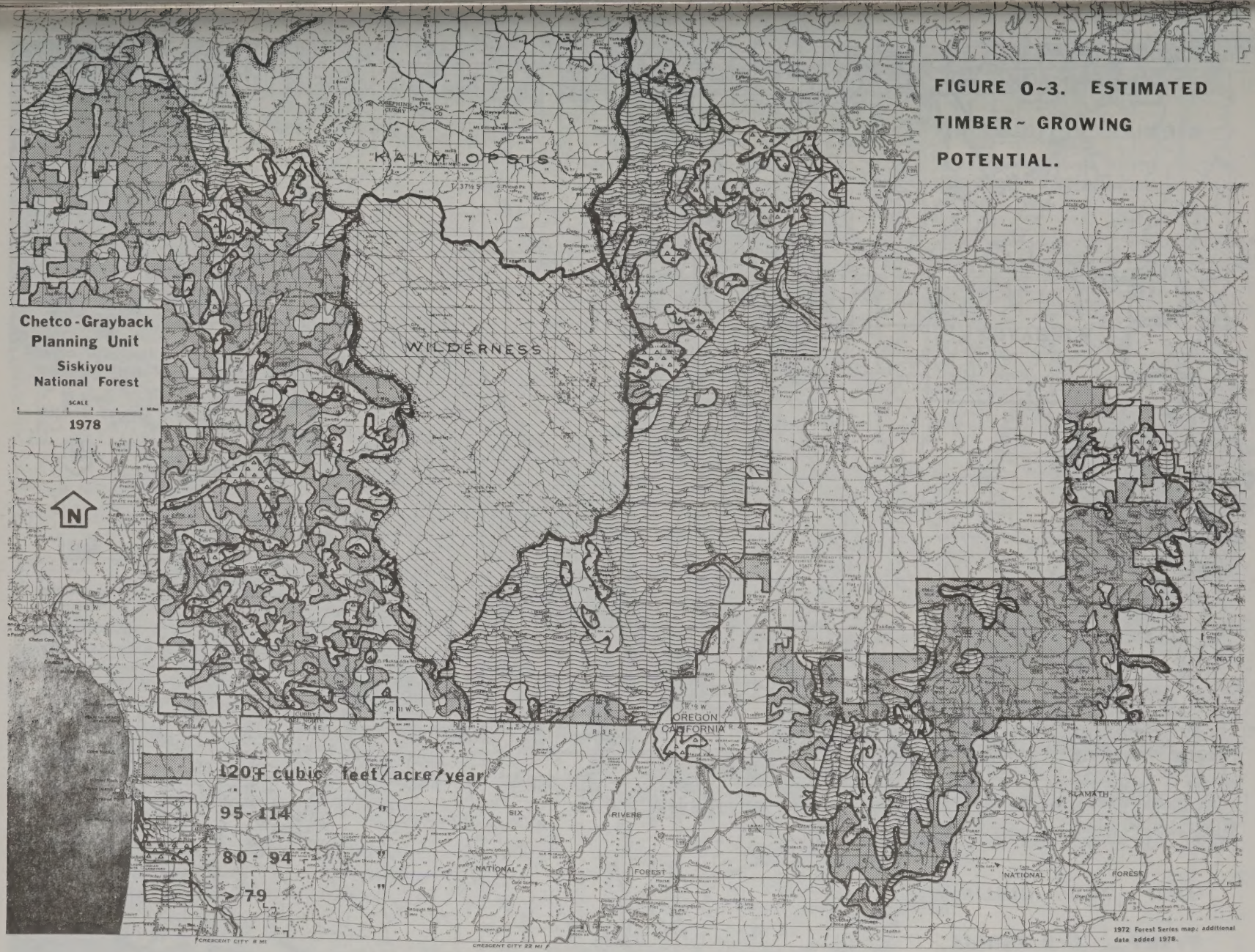


FIGURE O-3. ESTIMATED TIMBER-GROWING POTENTIAL.

Table O-3. Productivity of Land for Growing Timber.

Productivity Class 1/	% of Unit 2/	% of U.S. Forest Land 3/
120 ft^3	34.3	6.9
85-119 ft^3	27.6	15.4
50-84 ft^3	8.6	25.9
Less than 50 ft^3	29.5	51.8
	100.0	100.0

1/ Productivity class in cubic feet per acre per year.
2/ Estimated percent acres in each class under managed conditions.
3/ Source: U.S. Forest Service. 1973. Outlook for Timber in the United States. Washington, D.C.

Table O-3 indicates the relative productivity of the Unit by productivity class. Also, these statistics can be compared with National statistics for all forest land. Figure O-3 shows the timber growing potential on the Unit.

Utilizing intensive management techniques such as immediate planting, brush control, and stocking level control can increase growth rates over the natural succession of growth on most of these lands with the greatest benefits being obtained on the higher sites. Genetically improved seedlings and fertilization are other management tools used to stimulate growth.



View of Old-Growth Timber as Hikers Use Trail to Oregon Caves

P. Transportation System

The major components of the transportation systems in this Planning Unit are trails and roads.

With the exception of some high elevation ridges, dense brush and steep slopes make cross-country travel difficult to nearly impossible without a trail network. The trail system in the Unit, as elsewhere on the Siskiyou National Forest, evolved from aboriginal Indian trails. These primative trails were further developed by early settlers to serve isolated homesteads and mining areas. Following creation of the Forest in 1906, many administrative trails were developed; primarily for fire protection purposes.

As development of the area progressed, many miles of trails were replaced with administrative, mining, and timber sale roads. Advancing aerial fire suppression techniques further reduced the need for trails. However, in recent times recreational use of trails has been growing and now constitutes the primary use of the existing trail system. Figure P-1 shows the existing trail system. Table P-1 lists the major trails within or partially within the Unit boundaries. Table P-2 lists the mileages by kind of trail user within the Unit.

Table P-1. Major Trails in the Planning Unit.

Trail Name	Trail Number
Babyfoot Lake Trail	1124A 1/
Bailey Mountain Trail	1109 1/
Chetco Divide Trail	1210 1/
East Fork Illinois River Trail	1274
Emily Cabin Trail	1129 1/
Hazel Camp Trail	1106
Johnson Butte Trail	1110 1/
Kalmiopsis Rim Trail	1124 1/
Little Chetco Trail	1121 1/
North Fork Smith River Trail	1233 1/
Redwood Nature Trail	1111
Snow Camp L.O. Trail	1103
Tin Cup Trail	1117 1/
Upper Chetco Trail	1102 1/
Vulcan Lake Trail	1110A 1/

1/ All or partly within the Kalmiopsis Wilderness.

Table P-2. Trail Mileage in the Unit by Kind of Trail User.

Kind of Trail User	Mileage 1/
Combination of Users 2/	115
Pack and Saddle Horse, Hiker	110
Hikers Only	10
Total	235 3/

1/ Countless miles of abandoned trails and forgotten Indian trails, which are partially overgrown with vegetation, are scattered about the Unit. These are not accounted for in this table.
2/ Motorized vehicle, pack and saddle horse, hikers.
3/ Approximately 110 miles are within the Kalmiopsis Wilderness.

The existing trail network includes both high and low elevation trails and intermediate links. Most trails can be travelled nearly all year long, but the higher elevation trails are susceptible to temporary snow closures during the winter.



Old Redwood Highway from Grants Pass to Crescent City

Some areas have use restrictions placed upon them to control or to prohibit motorized vehicles and/or pack and saddle horse use. These restrictions limit season of use or to totally prohibited certain uses, such as motorized vehicle use within Wilderness Areas. The intent is to protect resource values, promote user safety and reduce user conflict. For more detailed information see the Forest Off-Road Vehicle Plan dated September 29, 1977.

Many non-primary trails have fallen into some degree of disrepair due to a reoccurring shortage of adequate trail maintenance funds. But, with the current emphasis on recreational trail development, current manpower programs and increased funding many of these trails are gradually being restored to standard.

To carry out the programs and activities of the Forest Service there is a need to plan, design, construct, maintain, and operate an extensive transportation system. On this Forest, most of this system is in the form of roads. Roads are simply the means to do a job, not the end product.

Table P-3 lists the major roads in the Unit while Table P-4 summarizes the road mileage by type of surfacing material.

Table P-3. Major Roads in the Planning Unit.

Name	Road Number
Bolan Lake Road	413
Chetco Divide Road	370
Chetco Pistol Road	3846
Chetco River Road	376
Grayback Road	3941
Illinois River Road	3504
Illinois Valley Highway	4007
Long Ridge Road	3917
Onion Camp Road	3843
Oregon Caves Highway	46 (State)
Pollywog Butte Road	3909
Redwood Highway	U.S. 199
Winchuck Chetco Road	3907

1/ Identified in Figure P-2 by large numbers.

Table P-4. Road Mileage in Unit by Surfacing Type. 1/

Surfacing Type	Road Mileage
Asphalt Pavement	10
Aggregate	540
Unsurfaced (Graded and Drained)	200
Primitive-Type	40 2/
Total	790

1/ Approximate mileage. Additional miles are added to the road system every year as new roads are built, abandoned roads are reconstructed, and "travel ways" are inventoried.

2/ There are many additional miles of "travel ways" that are not currently inventoried but which may permit wheeled travel, pending the existence of natural or man-made barriers.

Figure P-2 shows the existing road network in the Unit. The total planned road system mileage would vary significantly depending on alternative. Full development of any system would require 30 or more years.

Maintenance of all system roads is necessary to protect the investment and other resources from damage. It is also necessary to help insure the safety of users by removing or controlling safety hazards. It is necessary whether or not a road is currently being used by traffic.

Maintenance operations after construction may include such work as: keeping drainage facilities operational; cutbank slough and debris removal; repairing and reshaping the road running surface; dust abatement; roadside shrubbery control; etc. The intensity of care will vary from road to road according to a Road

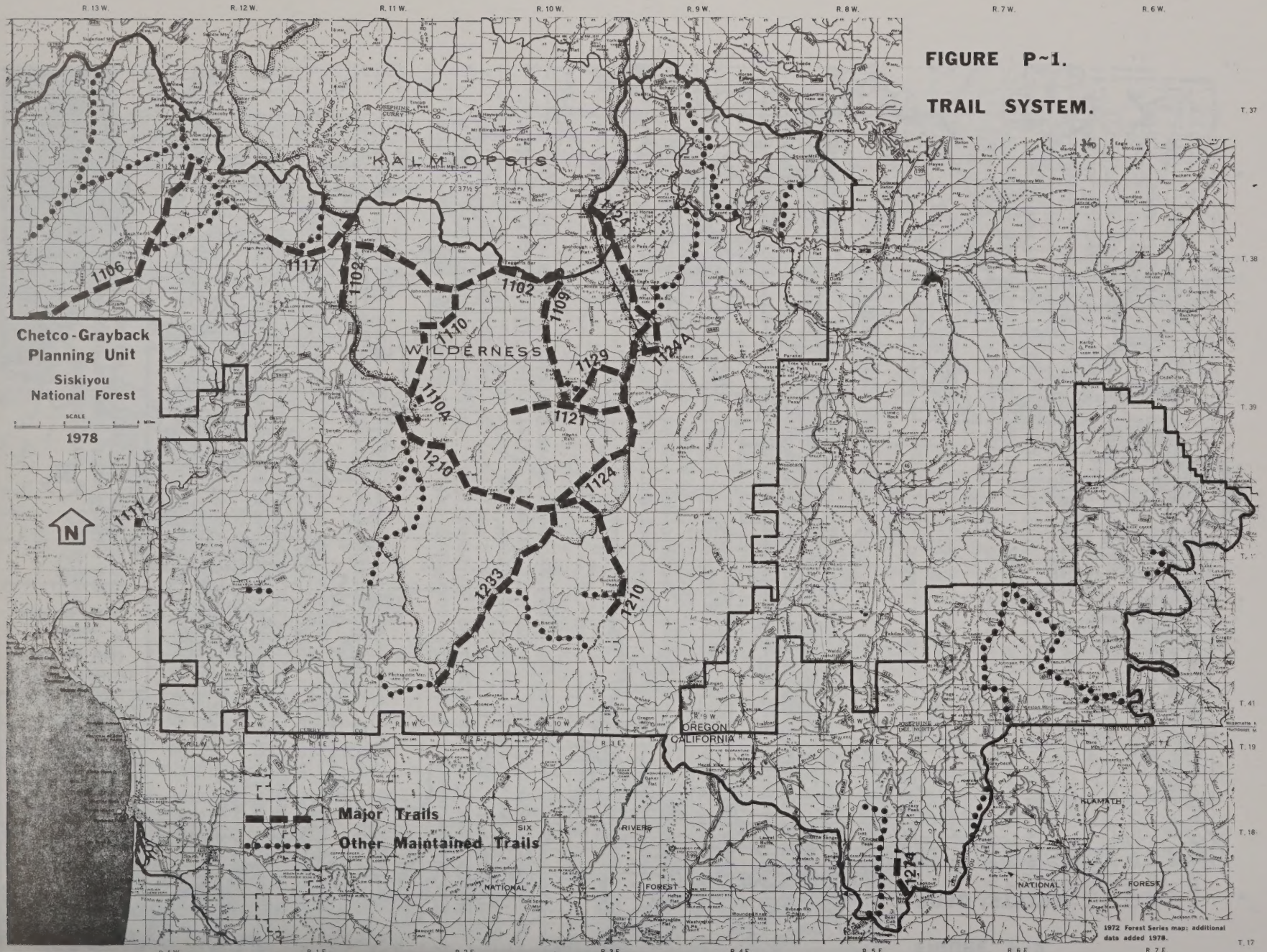
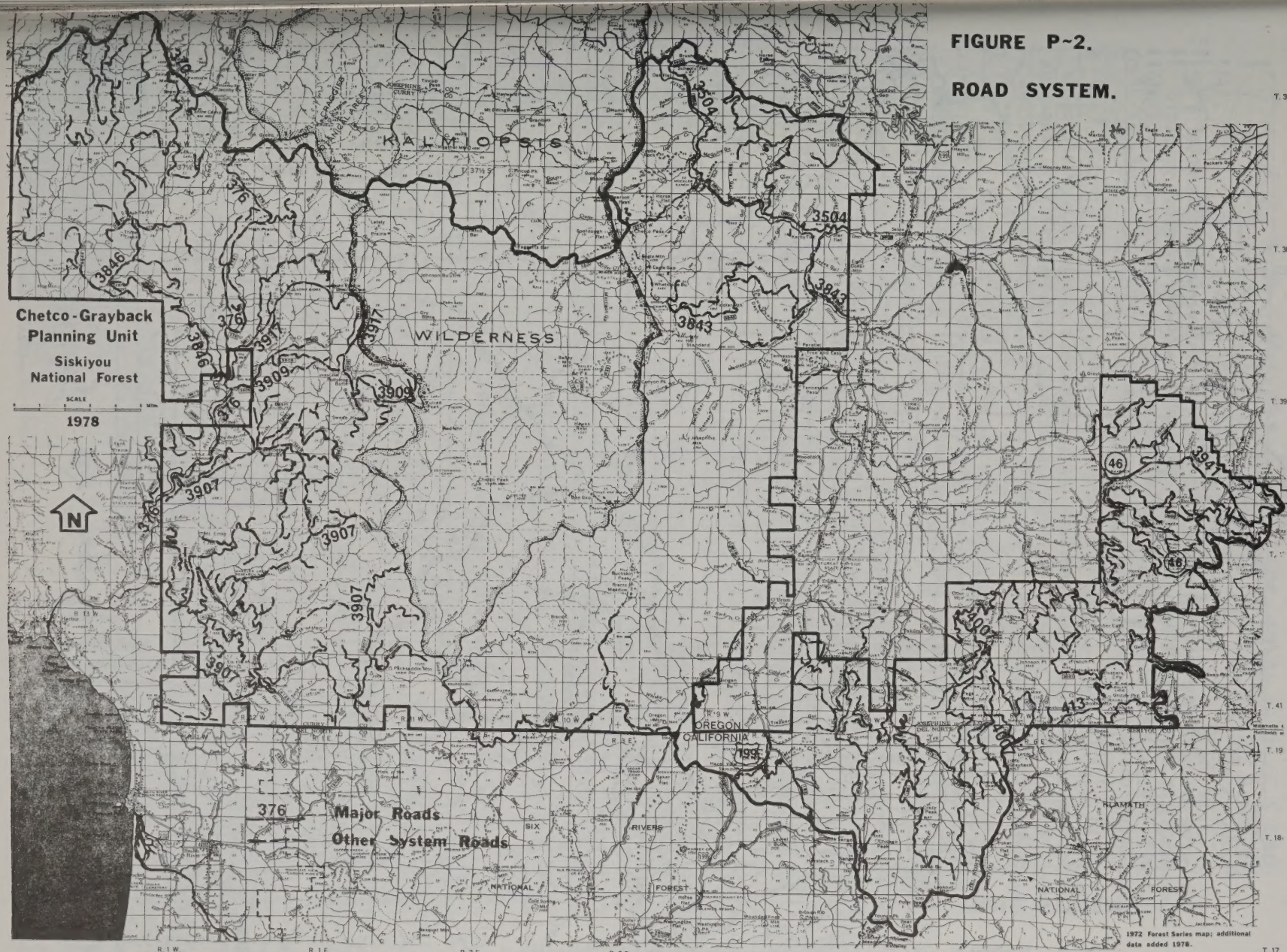

FIGURE P~1.
TRAIL SYSTEM.
Chetco-Grayback
Planning Unit
Siskiyou
National Forest
SCALE
1978
N
KALMIOPSIS
WILDERNESS
1106
1117
1102
1102
1109
1124
1170
1129
1124A
11104
1121
1210
1124
1111
1233
1210
1124
OREGON
CALIFORNIA
Major Trails
Other Maintained Trails
SIX
RIVERS
NATIONAL
FOREST
KLAMATH
NATIONAL
FOREST
1972 Forest Series map; additional
data added 1978.

FIGURE P-2.

ROAD SYSTEM.



Maintenance Plan. There are five levels of maintenance. The lowest level (maintenance of drainage facilities and runoff patterns) is normally applied to roads not opened for traffic. The highest level is applied to aggregate and asphalt paved high-use roads.

High runoffs from intense rain storms constitute the major hazard to roads in the Unit. The Siskiyou National Forest has received, and will continue to receive, some relatively intense storms. The Forest's Flood Emergency Road Maintenance Plan is updated annually and can be readily implemented when any particular storm poses a substantial hazard. Its purposes are to implement emergency actions to minimize damage to roads, to the watershed, and the fisheries resources, and to protect road users. In general, temporary repairs begin when emergency actions are completed. These actions are dependent on immediately available funds.

Other miscellaneous categories of the transportation system in the Planning Unit include some established helispot sites established primarily for fire control purposes.

Two major power transmission corridors exist in the Unit. One corridor is the Happy Camp line near Roads No. 4007 and 1916. This line connects Cave Junction, Oregon with Happy Camp, California. The other corridor has two parallel lines, the O'Brien line and the Whiskey Creek line, near Road No. 4014. These two lines connect Cave Junction, Oregon with Gasquet, California. Other localized power transmission and telephone lines extend a short distance into this Unit.

Q. Visual Management

In recent years the American public has expressed a growing concern about the environment in which it lives. Scenic quality has been one of the factors involved. In response to this concern, the Forest Service developed a Visual Management System to provide protection to the scenic values. An explanation of this System is located in the Appendix.

The diversity of land (variety classes) and the user interest in scenic qualities (sensitivity levels) were inventoried and used as a basis for applying visual standards to National Forest Lands. The Variety Class and Sensitivity Level maps display these categories. The most important to least important values are:

Variety Class		Sensitivity Level
Class A	Most Value	Level 1
Class B		Level 2
Class C	Least Value	Level 3

The Visual Management System directs that landscapes which contain a diverse variety be classified as A. In this Planning Unit the major rivers and water bodies were designated as Class A (Illinois, Chetco and Winchuck Rivers, and Bolan Lake). Besides the variety in landform and vegetation along the water bodies, the limited amount and attractive quality of the water itself provides a unique and highly valued resource. In addition to the water areas, the landscapes which contain unusual vegetative cover and rugged terrain were classified as A (Mt. Emily, Chetco Peak, Sourdough, and the sub-alpine character along the Siskiyou Crest). The Class C landscapes in the Planning Unit contain little topographic relief or vegetative variety (south of Kalmiopsis and Portuguese Flat). The remaining Forest Lands were classed as B.

Sensitivity levels were evaluated and assigned to each travel route, use area, and water body. Level 1 areas were sensitive because of the amount of use and percentage of recreation users. As could be expected, several of the travel routes correspond to the areas containing high variety (Illinois River Road, Chetco River Road and Winchuck River Road). Major travel routes and routes to major attractions were also designated as Level 1 (Caves Highway, roads and trails leading to the Kalmiopsos Wilderness, and Highways 199 and 101). The area visible from each travel route was mapped and recorded as background, middleground and foreground.

The visual standards (visual quality objectives) were determined by combining the variety classes and sensitivity levels. The degree of alteration from a natural landscape allowed by each objective depends on combined landscape character and the degree of concern for scenery. Five degrees of objectives are provided:

Preservation:	No alteration of the natural landscape.
Retention:	Least degree of alteration.
Partial Retention:	
Modification:	
Maximum Modification:	Greatest degree of alteration.

The visual objectives in this Planning Unit are displayed on the visual quality objectives map.

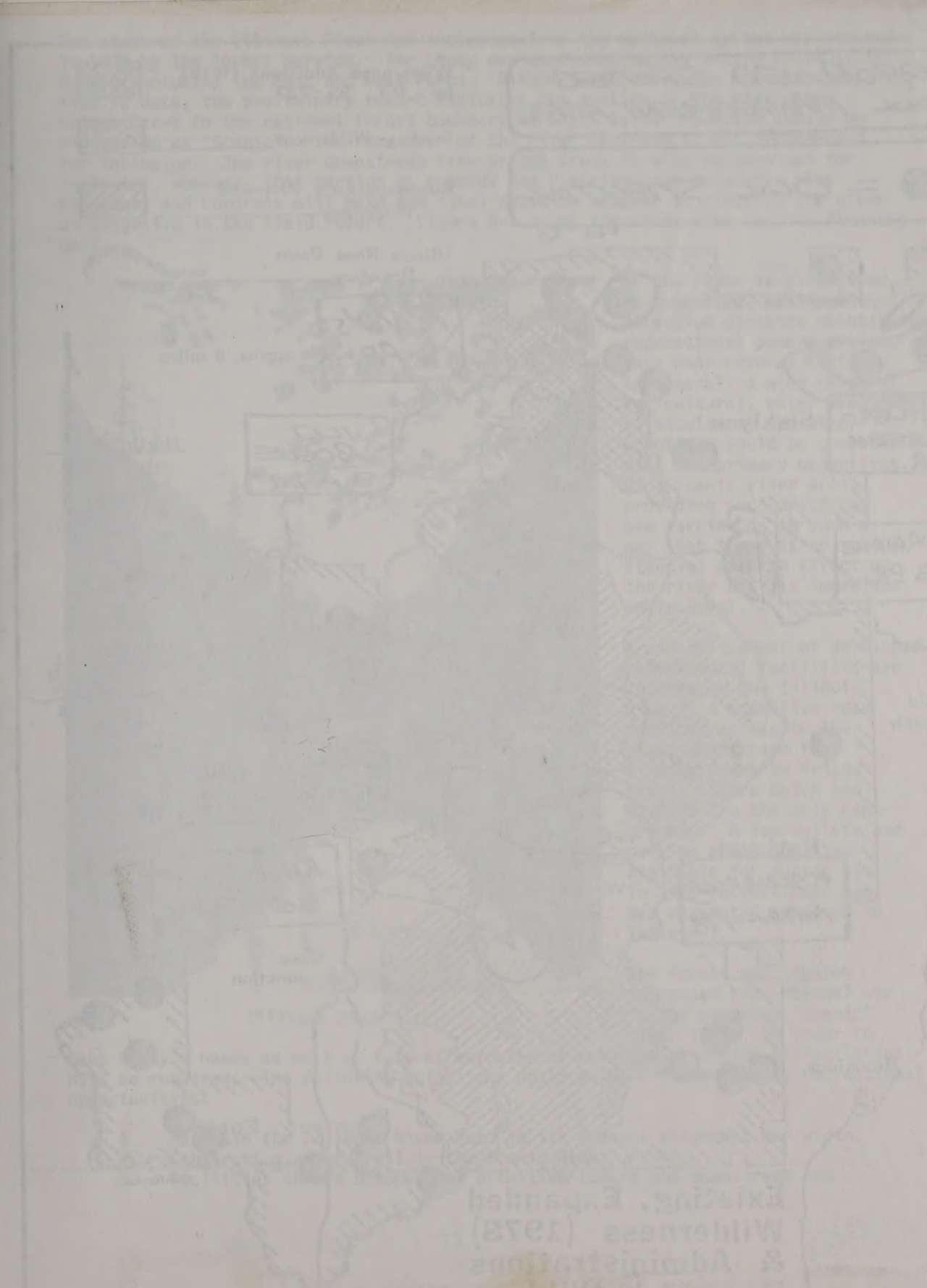
In the Planning Unit, "preservation" is limited to the Kalmiopsis Wilderness, Babyfoot Lake Unusual Interest Area, and Wheeler Creek Natural Area. "Retention" is closely associated to the major travel routes. Most of the "partial retention" areas lie in a middleground position and provide a backdrop to the sensitivity level 1 travel routes.

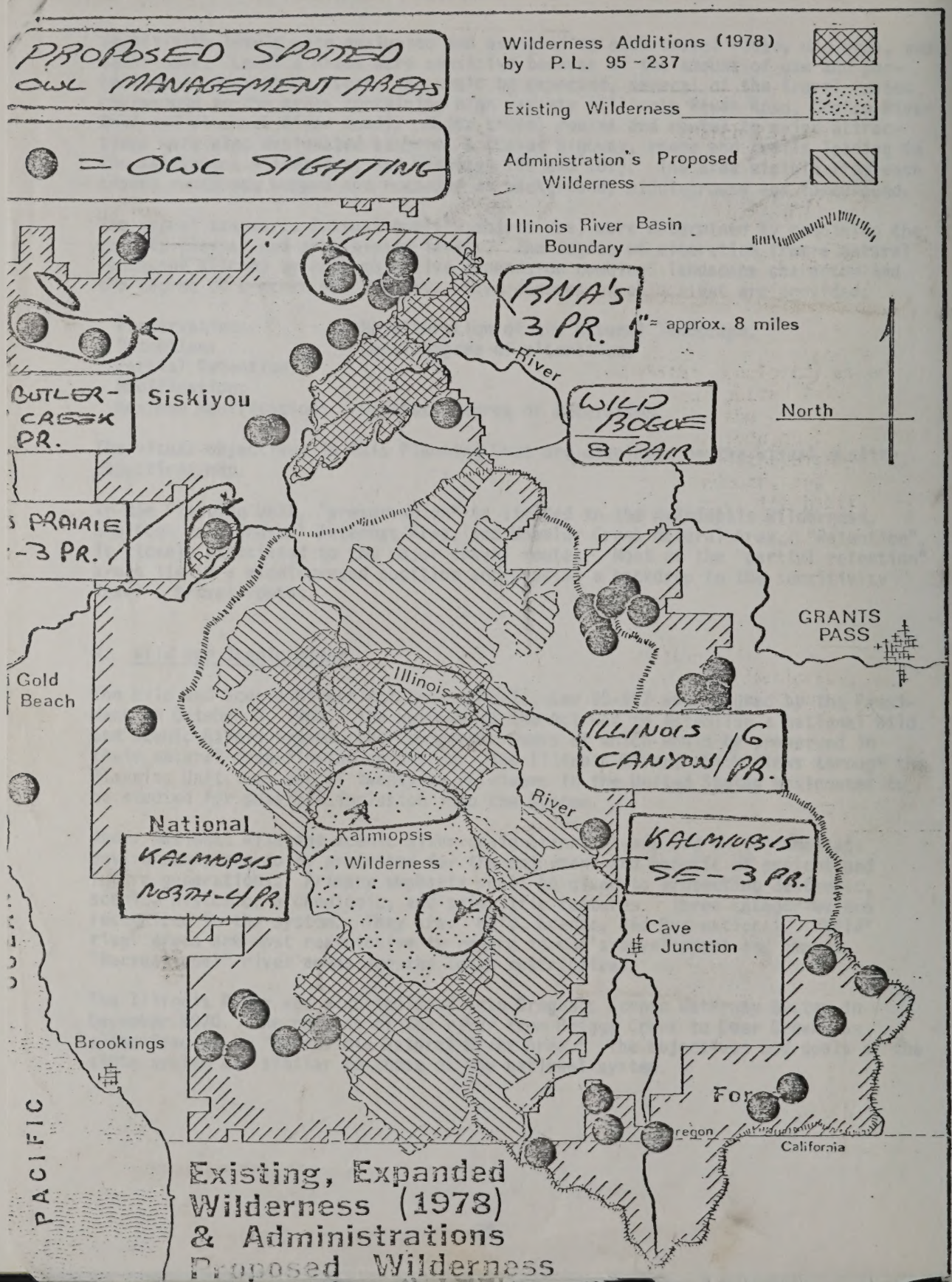
R. Wild and Scenic River

The Wild and Scenic Rivers Act became Public Law 90-542 when signed by the President on October 2, 1968. The purpose of the Act was to establish a national Wild and Scenic Rivers System, the component rivers of which would be preserved in their natural free-flowing condition. The Illinois River, which flows through the Planning Unit, was one of twenty-seven rivers in the United States designated to be studied for possible inclusion into the System.

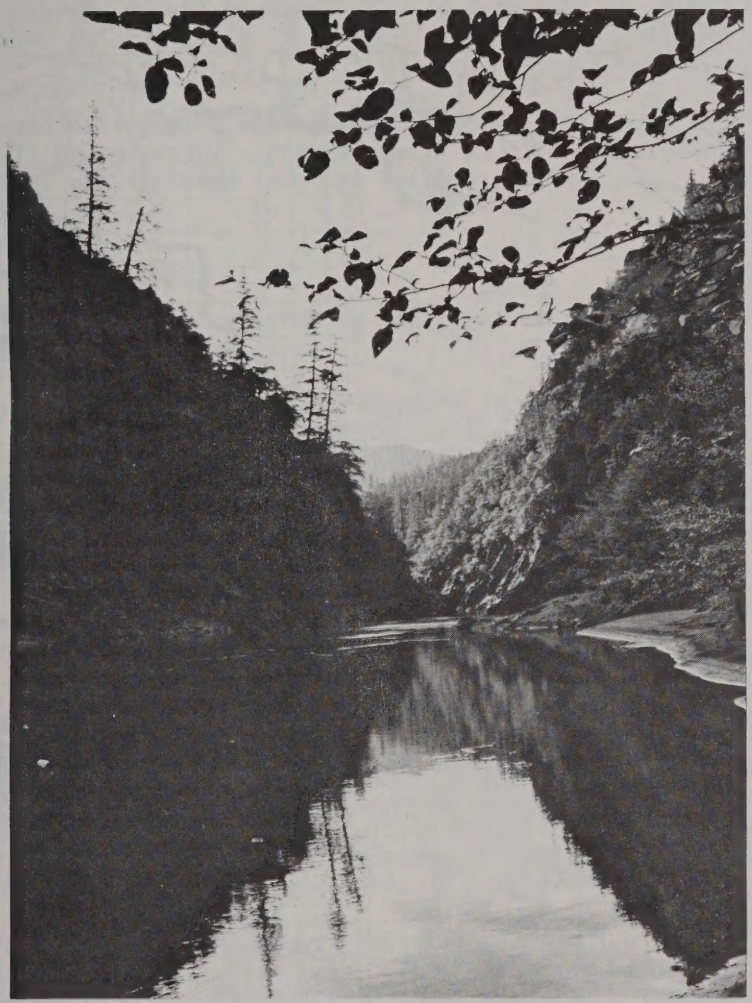
Under National Wild and Scenic River designation, rivers and their immediate environments are to be protected for the enjoyment and benefit of present and future generations. Primary emphasis shall be given to protecting aesthetic, scenic, historic, archeologic, and scientific features. Three categories are recognized in the system. They are: Wild, Scenic, and Recreational. "Wild" river areas are most restrictive in regard to man's development and impact. "Recreational" river areas are the least restrictive.

The Illinois River was also included into Oregon's Scenic Waterway System in December 1970. The portion of the river from Briggs Creek to Deer Creek was classified as an "Accessible Natural River Area." The objectives and goals of the state system are similar to those of the national system.




PROPOSED SPOTTED OWL MANAGEMENT AREAS
= OWL SIGHTING
Wilderness Additions (1978) by P.L. 95-237
Existing Wilderness
Administration's Proposed Wilderness
Illinois River Basin Boundary
RNA'S 3 PR.
1" = approx. 8 miles
North
River
BUTLER-CREEK PR.
Siskiyou
WILD BOGUE 8 PAIR
PRAIRIE -3 PR.
GRANTS PASS
Gold Beach
Illinois
ILLINOIS CANYON 6 PR.
River
National
KALMIOPSIS NORTH-4 PR.
Kalmiopsis
Wilderness
KALMIOPSIS SE-3 PR.
Cave Junction
Brookings
PACIFIC
Oregon
California
Existing, Expanded Wilderness (1978) & Administrations Proposed Wilderness

The study of the Illinois River for inclusion into the national system was started in 1972 by the Forest Service. The study was conducted on the entire Illinois in Oregon including the East and West Forks. Although the river has not been classified to date, the preliminary report indicates the portion of the river from Briggs Creek to the national forest boundary at Eight Dollar Mountain should be classified as "Scenic". The remainder of the river upstream is not recommended for inclusion. The river downstream from Briggs Creek is also recommended for inclusion, however, that portion is outside the Planning Unit boundary. The President and Congress will make the final decision whether to classify the river as suggested in the field report. Figure R-1 shows the study area in this Planning Unit.



Illinois River

If the river is classified as suggested, management direction dictates maintaining recreational opportunities in a near natural setting. In general, a wide range of agricultural, water management, silvicultural and other practices could be compatible with the primary objectives of a scenic river area, providing such practices are carried on in such a way that there is no substantial adverse effect on the river and its immediate environment.

A minimal amount of developed recreational facilities are located on the Illinois River. A primitive road provides access to the river downstream from Sixmile Creek to Briggs Creek. Store Gulch and Sixmile are the only campgrounds. A few toilets and parking areas are also available for public use. In 1976 recreational use was estimated as shown in Table R-1.

The forest anticipates increased recreational use in the proposed "Scenic" river area. In order to meet today's needs as well as future recreational needs an expansion of facilities will be required. The following guidelines would be used in developing recreational opportunities:

1. Maintain the Illinois River Road in its present alignment and width.
2. Construct a river trail in the Scenic Area.
3. Facilities should become more primitive toward the downstream end.

FIGURE R-1. WILD AND SCENIC RIVER CLASSIFICATIONS.

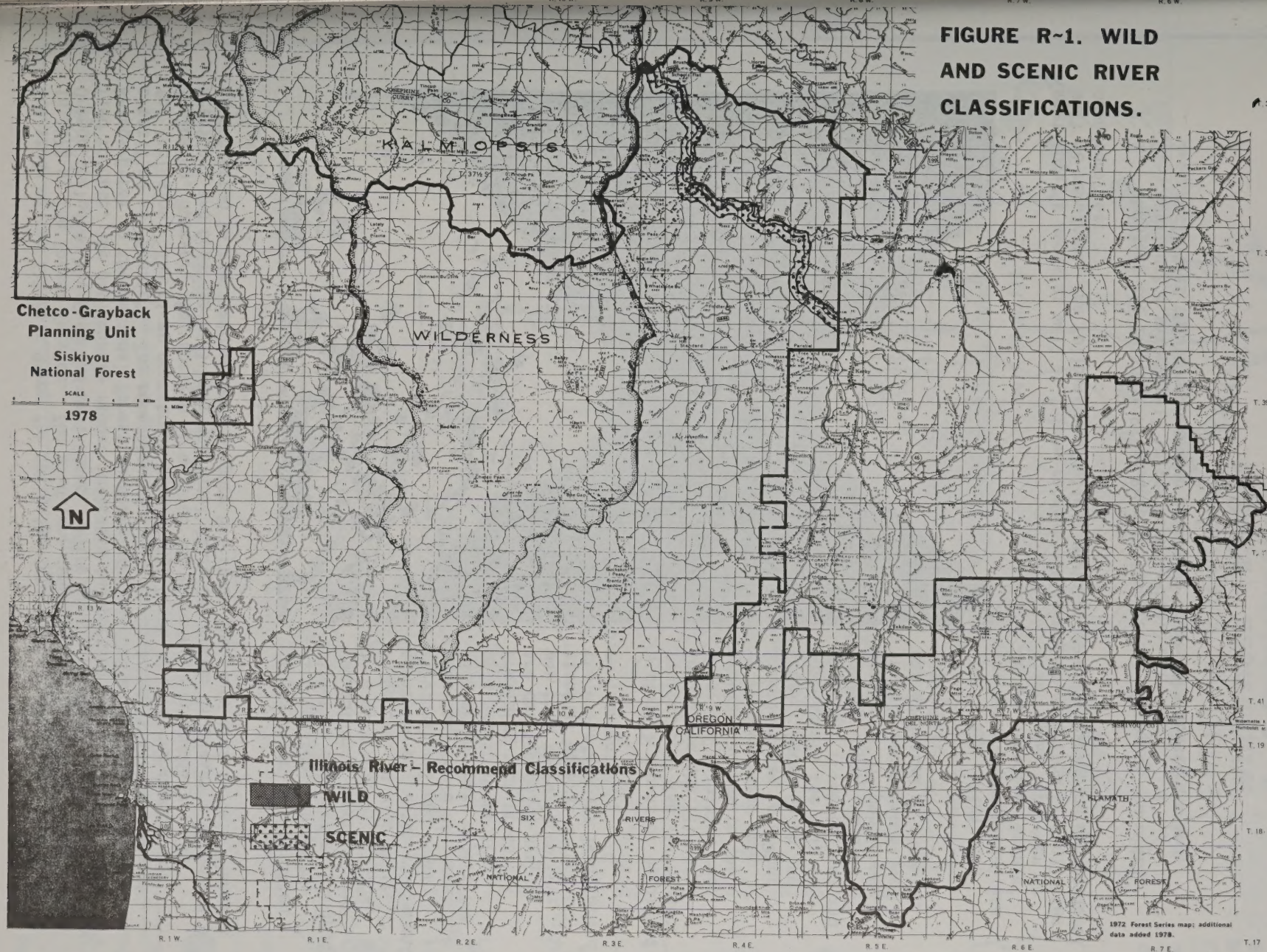


Table R-1. 1976 Recreational Use on the Illinois River in Planning Unit.

Type of Recreation	Visitor Days
Camping and Picnicking	1,800
Fishing	6,500
Floating	1,600
Swimming	3,000
Hiking	100
Hunting	300
Nature Study	700
Gathering Forest Products	1,000
TOTAL	15,000

Coordination with other types of activities, such as timber harvest, mining, etc., will be necessary. Priority will be given to protecting the values for which the river was included into the system.

S. Wilderness

Wilderness is a resource by the terms of the Multiple Use-Sustained Yield Act of 1960. It says, in part:

> "The Secretary of Agriculture is authorized and directed to develop and administer the renewable surface resources of the national forests for multiple use and sustained yield of the several products and services obtained therefrom. . . The establishment and maintenance of areas of wilderness are consistent with the purposed and provisions of this Act (Sec. 2).
>
> "(q) 'Multiple use' means: The management of all the various renewable surface resources of the national forests so that they are utilized in the combination that will best meet the needs of the American people . . . with consideration being given to the relative values of the various resources, and not necessarily the combination of uses that will give the greatest dollar return or the greatest unit output."

The Multiple Use-Sustained Yield Act preceded the Wilderness Act by four years. It made law the longstanding Forest Service practice of recognizing wilderness through Secretary of Agriculture Regulation. The Forest Service pioneered the wilderness concept by designating a tract of 433,000 acres in the Gila National Forest in New Mexico, in 1924.

Passage of the Wilderness Act of 1964 gave legislative status to 54 units of National Forest Wilderness. The Kalmiopsis Wilderness was one unit and added 76,900 acres to the 9.1 million-acre system. There were 34 National Forest Primitive Areas (Primitive Areas were precursers to Wilderness and also were designated through a Regulation of the Secretary of Agriculture) that the law required to be studied for Wilderness. The recommendations to Congress were made by 1974.

The Resource Planning Act of 1974 established a goal for the Wilderness System. In the past, wilderness selection was a study of individual areas for which an advocate has proclaimed its values. The Resources Planning Act based on the results of the "roadless area review" analyzed wilderness needs on a national

context in relation to other resource values and national needs and priorities for all goods, services, and amenities available from the National Forest System. The result was a target for classification of 25-30 million acres of wilderness by the year 2020. Thus, a National Wilderness Preservation System of 40 million plus acres is envisioned when other agencies are considered.

In 1978 Congress passed into law the Endangered American Wilderness Act (1978) PL 95-237 adding approximately 103,000 acres to the existing Kalmiopsis Wilderness (76,900 acres). It also added the 27,200 acre Wild Rogue Wilderness to the National Wilderness System. The forest has 19 percent or 207,100 acres allocated as wilderness. On this Unit Congress added 31,600 acres to the existing 57,075 acres of the Kalmiopsis Wilderness. This area is located south of the existing Kalmiopsis Wilderness in Curry and Josephine counties.

The Kalmiopsis contains some of the most rugged and inaccessible country in the Siskiyou National Forest. It is characterized by deep, rough canyons, sharp ridges, and sparse vegetation. Serpentinite and various peridotites are prevelent in the area. It has a high potential for mineral deposits particularly nickel and chromite. Several mining roads do exist within the wilderness country.



Vulcan Lake in the Kalmiopsis Wilderness

The flora is noteworthy not only for the great number of species but also for the abundance of rare and unusual plants. Known to grow within the Kalmiopsis Wilderness are 12 species of coniferous trees, 9 species of hardwood trees, over 31 species of shrubs, and many species of herbaceous plants. Kalmiopsis leachiana, which resembles a miniature rhododendron, is abundant in portions of this wilderness. It is believed to be a relic of the tertiary age. The plant was discovered in 1930 by Mrs. John R. Leach of Portland, Oregon.

Because of the wilderness's harshness and its distance from large populations it is one of the most lightly used wilderness areas in the Pacific Northwest. Recreation use grew from 400 visitor days in 1966 to 9,200 visitor days in 1977. This represents less than 1.2% of the wilderness days recorded in 1977 within the National Forest of Oregon and Washington. The acreage within the Kalmiopsis Wilderness, by contrast represents 4.0% of the wilderness acreage for the same region.

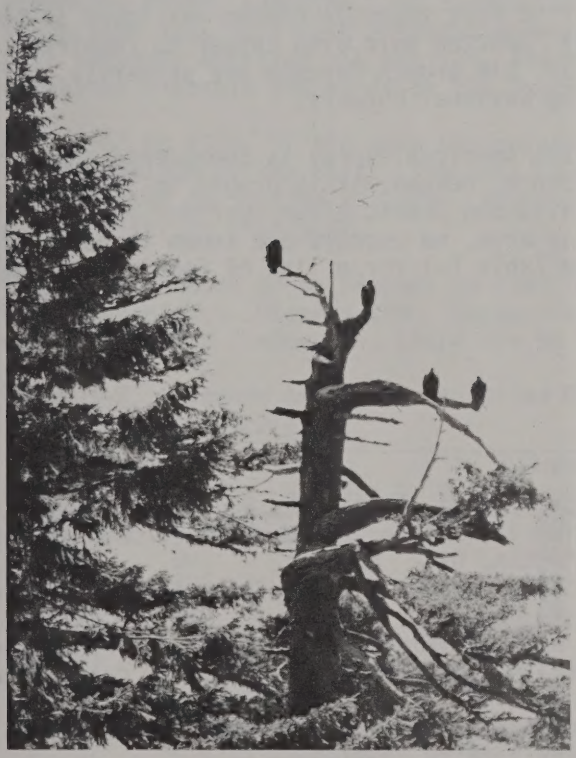
T. Wildlife

A minimum of 250 species of wildlife utilize the Planning Unit. Most species are residents, but some birds are seasonal visitors or migrants.

Sixteen species of amphibians (10 salamanders, 5 frogs, and 1 toad) inhabit the Planning Unit. The salamander species range from the large and formidable-looking Pacific Giant down to the diminutive Olympic. A common and easily observed salamander of the Planning Unit's rivers, streams, and ponds is the rough-skinned newt. Common frog species are the tailed, Pacific tree, and Northern red-legged.

The Planning Unit contains 17 reptile species (11 snakes, 5 lizards, and 1 turtle). Lizard species include the alligators, sagebrush, fence, and western skink. Snakes found within the Unit range from such large species as the gopher and racer down to the small and docile rubber boa and the colorful ringneck. Four species of garter snakes are residents of the Planning Unit, as is the venomous Pacific rattlesnake.

Approximately 64 species of mammals inhabit the Planning Unit. Resident game mammals include Roosevelt elk, blacktail deer, black bear, and western gray squirrel. Furbearers (unregulated, regulated, and protected) include mountain lion, bobcat, gray fox, coyote, river otter, mink, beaver, raccoon, ringtail cat, skunks, marten, and probably fisher. So-called small mammals account for most of the mammal species - the unit harbors, among others, a variety of shrews, moles, bats, lagamorphs, ground squirrels, tree squirrels, pocket gophers, mice, voles, and woodrats.



Wildlife Tree

Over 150 species of birds are permanent residents, summer residents, winter visitors, or are found migrating through the Planning Unit. Game birds include mountain and valley quail, blue and ruffed grouse, mourning dove, and band-tailed pigeon. Birds of prey found on the Unit include the red-tailed hawk, goshawk, Cooper's hawk, golden and bald eagles, sparrow hawk, turkey vulture, screech owl, great horned owl, pygmy owl and northern spotted owl.

Birds associated with the Unit's rivers and streams include the common merganser, wood duck, spotted sandpiper, great blue heron, belted kingfisher, and dipper.

Woodpeckers such as the pileated, hairy, downy, flicker and yellow-bellied sapsucker are found in suitable habitats throughout the Unit. The largest group of species present are the passerines, or songbirds. This group includes the flycatchers, swallows, jays, chickadees, nuthatches, wrens, thrushes, kinglets, vireos, wood warblers, blackbirds, grosbeaks, finches, and sparrows.

One mammal and four bird species which are or may be found in the Unit are classified either threatened or endangered by the Federal Government and/or the State of Oregon.

The wolverine, on the Oregon threatened list (and considered "Rare" in California), may be present in the Unit. Although the presence of this animal has not been verified on the Siskiyou National Forest in recent years, their presence on the adjacent Six Rivers National Forest was documented in 1973.

The peregrine falcon is on both the Federal and the State endangered species lists. Although a single peregrine falcon was sighted on the Planning Unit in the fall of 1968, in recent years no nest sites of this bird have been found on the Forest, nor have any sightings of adults been made during the breeding season; however, at least one peregrine nest was recently located on a near-by National Forest.

Bald eagles are occasionally seen within the Unit. In times past these birds may have nested in the vicinity of the Chetco River. The bald eagle is classified by the Federal Government as endangered in California and Threatened in Oregon. California and Oregon list the bald eagle as endangered and threatened respectively.

The northern spotted owl, as species listed as threatened by the State of Oregon, nests within the Planning Unit; both individuals and pairs have been observed at 17 different locations. Northern spotted owls are almost always found associated with multi-layered old growth forest. Large overstory trees are used for nesting and winter roosts; small understory trees are used for summer roosts. In a 1973-74 study, the average height and DBH of 18 nest trees in Oregon was found to be 101 feet and 54 inches respectively. 2/ Spotted owls also appear to require a territory of up to 300 acres or more. 3/ Old growth forests are primarily confined to public lands - principally within the National Forests.

On a nation-wide basis, the status of the American osprey is considered undetermined. 4/ At least 308 ± 23 pairs of osprey nested within Oregon in 1976. 5/ Although ospreys nest along the Rogue Wild and Scenic River corridor and at several locations in the Illinois Valley area, no ospreys are known to nest within the Chetco-Grayback Planning Unit. See Table T-1 for a list of Federal endangered and threatened species.

1/ U.S. Fish and Wildlife Service. 1973. Threatened Wildlife of the United States. Resource Publication 114. Superintendent of Documents, U.S. Government Printing Office. Washington, D.C. p. 203.
2/ Roberts, H.B. and G.S. Lind. (No date). Status of the American Osprey (Pandion, haliaetus carolinensis) in Oregon. 14 pp.
3/ Anderson, Jim. 1971. Eagle Habitat Requirements and Forest Management. Proceedings of the Fish and Wildlife Habitat Management Training Conference. Engene, Oregon. pp. 56-69.
4/ Forsman, E. 1976. A Preliminary Investigation of the Spotted Owl in Oregon. Ms Thesis. Oregon State University. 127 pp.
5/ Gould, G.I., Jr. 1975. Habitat Requirements of the Spotted Owl in California. California-Nevada Wildlife Transactions 1975. pp. 102-117.

Table T-1. Wildlife Species Classified as Endangered, and Threatened.

Species	Scientific Name	Classification 1/
Bald Eagle	Haliaeetus leucocephalus	T
American Peregrine Falcon	Falco peregrinus anatum	E
Arctic Peregrine Falcon	Falco peregrinus tundrins	E
Aleutian Canada Goose	Branta canadensis leucopareia	E
Brown Pelican	Pelecanus occidentalis	E
Columbian White Tailed Deer	Odocoileus virginianus leucurus	E

1/ E = endangered; T = threatened with endangerment.
In the 1978 edition of "Threatened Wildlife of the United States".

Wildlife interact with and are often an integral part of other forest land uses. The uses most closely associated with wildlife include both timber management and many forms of recreation.

Wildlife are a source of recreation for many visitors to the Forest. Hunters spend thousands of man-days each year pursuing game animals inhabiting the Unit. Black-tailed deer attract the greatest number of hunters but Roosevelt elk, quail, grouse, and band-tailed pigeons are harvested as well (Tables T-2, T-3, T-4). Although the annual black-tailed deer harvest has remained relatively constant during the last 15 years, hunting pressure has more than doubled (Table T-2).

Before the white man arrived, Roosevelt elk inhabited most portions of the Planning Unit. Following settlement of the area herds were eventually eliminated by extensive fires, poaching, and commercial hunting for hides and meat. In recent years game laws have been enforced more effectively, timber management activities have enhanced existing elk habitat, and elk transplants have combined to re-establish sizeable elk herds on the Unit.

From 1967 to 1975, 91 elk were transplanted to five locations within the Curry County portion of the Unit. The area south of the Rogue River in Curry County was first opened to hunting in 1974. About 33 bull elk were harvested on the Chetco Ranger District that year.

Elk are not known to be present on that portion of the Chetco-Grayback Planning Unit east of U.S. Highway 199. Because of possible wintertime conflicts between elk and private landowners, there are no plans to transplant elk to this area.

Table T-2. Average Annual Black-tailed Deer Harvest for the Planning Unit, 1960-1976. 1/

Time Period	# of Hunters	Harvest 2/ 3/	% Hunter Success	Hunter Days	Days/ Hunter	Days/ Kill	Kill/ Sq. Mile
1969-76	1230	361	30	9013	7.4	25.3	0.86
1966-72	902	371	41	6184	6.8	16.7	0.85
1963-69	786	386	49	5154	6.6	13.4	0.88
1960-66	696	369	53	4312	6.2	11.7	0.84

1/ Based on inferred data from the Oregon Department of Fish and Wildlife annual deer harvest summaries.
2/ Includes unit permit harvest (antlerless).
3/ The kill is assumed to take place only on the roaded portion of the Planning Unit.

Table T-3. Average Annual Roosevelt Elk Harvest for the Planning Unit, 1974-1976. 1/

# of Hunters	Harvest 2/	% Hunter Success	Hunter Days	Days/ Hunter	Days/Kill
201	23	11	817	4.1	36

1/ Based on inferred data from Oregon Department of Fish and Wildlife annual elk harvest summaries.
2/ Includes only the inferred kill on the roaded portion of the Chetco-Grayback Planning Unit.

Table T-4. Average Annual Game Bird Harvest for the Planning Unit, 1973-74. 1/ 2/

Mountain & Valley Quail		Blue & Ruffed Grouse		Band-tailed Pigeon	
Hunters	Harvest	Hunters	Harvest	Hunters	Harvest
25	126	41	80	120	744

1/ Based on inferred data from Oregon Department of Fish and Wildlife annual game bird harvest summaries.
2/ The kill is assumed to take place only on the roaded portion of the Planning Unit.

A number of black bear are harvested each year. In addition, a few trappers utilize the fur resources of the Unit, with bobcat, coyote, and gray fox being the principal species taken.

Non-consumptive uses of wildlife resources are also important. Although no figures for non-consumptive use are available for the Planning Unit, the 1970 National Survey of Fishing and Hunting showed that for every day a hunter spent in the field 4 other individuals were bird-watching or photographing and/or observing wildlife in general.

Wildlife-related recreation is centered in the roaded areas. Virtually all hunting takes place within a few miles of some road. Development activities, including timber management, generally improve game habitat and increase populations of game animals such as Roosevelt elk and mountain quail, this results in greater opportunities for humans to both hunt and observe the animals. Development activities also limit the opportunities for human contact with those non-game animals which frequent mature and/or unmanaged forest land (including such birds as the goshawk, saw-whet owl, Hammond's flycatcher, hermit thrush, and red cross-bill). "Contacts" made with these forest animals are important to many people who use the wildlife resources of the Planning Unit.

The key to maintaining self-sustaining populations of all wildlife species living within the Planning Unit is to maintain a diversity of habitat. However, a few isolated locations for specific habitat types should not be depended on to provide adequate representation. Wildlife habitat requirements are too complex and the potential loss of habitat by fire or other natural catastrophies is too great to adopt this strategy. Similarly, maintenance of a fully regulated forest with stand ages evenly distributed between ages 1 and 100 will be inadequate for the Unit as a whole with respect to providing habitat for old-growth-dependent wildlife species.



III. EVALUATION CRITERIA

In past years we pioneered into the Forest for our desired goods and services with only a general awareness for natural beauty always available in the vast wilderness. Now we are faced with making specific land management allocations, some favorable, some adverse, which may affect all available resources.

There are three different criteria used in the determination and evaluation of alternatives in this Planning Unit. They are: a) Basic Planning Assumptions; b) Management Goals and Constraints; c) Descriptions of Land Management Allocations.

a. Planning Assumptions

1. Most areas within the Planning Unit can support a number of different uses - singularly or in various combinations.

2. Resources within the Unit are scarce relative to both the variety and the magnitude of demands for public benefits.

3. Benefits include anything that is for the good of a person(s) or thing(s). They may be monetary or non-monetary, tangible or non-tangible.

4. Greater public benefits from the Unit can be attained through effective land allocation, improved utilization, and more intensive use of the land.

5. All uses (to attain different benefits) are incompatible to some degree. The incompatibilities tend to increase as the intensities of use increase in the same area at the same time.

6. Conflicts between assumptions #4 and #5 can be moderated by allocation of land according to land capabilities for the various uses and by management constraints on some or all uses.

7. It is virtually impossible to maximize two or more different benefits in the same space at the same time.

8. A multiple use management strategy for large planning units like the Chetco-Grayback Planning Unit usually maximizes total net public benefits. This means that management does not maximize the benefits for any single use over the entire Unit. (This does not, however, suggest that all or most uses must necessarily occur on the same acre. Indeed, in practice, multiple use strongly tends to be a patchwork of dominant uses over a Unit. Secondary uses usually occur as consistent with the particular dominant use in a given segment of the larger unit.)

9. The planning period extends into the distant future (i.e., 100 years); however, the rapid technologic and socio-economic changes characteristic of recent decades cause long-range plans (such as this plan) to become increasingly obsolete with age. At a minimum, plans of this nature must be thoroughly re-evaluated within 5 to 10 years.

Resource-related assumptions include the following:

1. There will be an increasing need to maintain a high quality environment.

2. The economies of the surrounding communities will, within the foreseeable future, continue to be heavily dependent upon the wood industry and on the National Forest for raw material; however, it is likely that these local economies will continue to diversify with increasing emphasis on the recreation/tourism industry and on various "footloose" manufacturing industries.

3. The national demand for wood products will increase.

4. There will be an increasing demand for all types of outdoor recreation.

5. The five major rivers, their tributaries, and other streams important to the fisheries resource, will continue to provide good quality habitat for anadromous fish.

6. The State of Oregon's stringent water quality standards for the Rogue River Basin will apply to all major rivers and streams within the Planning Unit.

7. Population levels of most unique, threatened, and endangered floral and faunal species will continue to decline as development progresses. Positive steps can be taken to protect these species and their habitats. (NOTE: Approximately 19% of the Unit currently is managed under classifications that will retain or largely retain the existing ecosystems.)

8. The scenic resource will continue to increase in importance and significance in Forest Service resource management.

9. Forest and regional trends indicate the desirability of maintaining, upgrading, or creating trails with a significant recreation potential.

10. The national needs for mineral resources will increase and domestic supplies of certain key minerals will become increasingly valuable.

11. The risk of wildfire ignition will increase with improved access as will accessibility for suppressive action.

b. Management Goals and Constraints

The overall management goal for this Planning Unit is "to maximize the net benefits over time which society derives from the forest resources within (and related to) the Planning Unit (benefits being measured in terms of both quantity and quality)." The weight given to each of the component variables in this function will reflect the values of the general public as expressed in legislative mandates, administrative directives, direct expressions, and other methods.

There are numerous constraints (or sub-goals) to work within. For example, management must be compatible with relevant laws and regulations, with the national long-range RPA program, and with existing budget levels. Several of the more important laws are: The Organic Administration Act of 1897; the Multiple Use-Sustained Yield Act of 1960; the National Environmental Policy Act of 1969; the

Forest and rangeland Renewable Resources Planning Act of 1974 (RPA); the National Forest Management Act of 1976; Executive Order 11988 Floodplain Management, and Excecutive Order 11990 Protection of Wetlands; National Historic Preservation Act of 1966; and, Executive Order 11593 1971-Preservation and Enhancement of the Cultural Environment, (Refer to Forest Service Manual 1950 for additional important Acts). The RPA program targets referred to above are shown for both the national and regional levels in the Appendix.

Statewide Planning Goals developed by the State of Oregon Land Conservation and Development Commission are shown in the Appendix. A summary evaluation of the degree of support each alternative provides to each goal appears in the discussion and comparison of alternatives.

Future conditions on the Unit must be monitored for comparison with the present status quo conditions to assure compliance with the following, more specific constraints:

1. Management activities must protect and maintain the existing soil resource.

2. Management activities must protect and, where practical, improve water quality for the fisheries resource and for other uses.

3. Land management allocation and management activities, in combination, must maintain relatively high levels of timber outputs and mineral availability on the Unit.

4. Management activities must protect visual and other amenity qualities of the Unit as a whole from substantial long-term degradation.

5. Land management allocation and management activities must protect and, where practical, increase the recreation potential for all types of outdoor recreation.

6. Management activities must protect and will, where practical, enhance fish and wildlife habitat.

7. Management activities must protect the qualities of the Illinois River until the study recommendation to include it in the National Wild and Scenic Rivers Systems examined by Congress.

8. Management activities must, to the extent practical, adequately protect endangered, threatened, and rare flora and faunal species within the Unit.

9. Management activities must identify, evaluate, and where appropriate, protect, historical and archeological sites within the Unit.

10. Management activities must keep fire hazard at an acceptable level, commensurate with the risk.

11. Existing classified areas in the Unit (a portion of the Kalmiopsis Wilderness, the Wheeler Creek Natural Area, Babyfoot Lake Unusual Interest Area-Botanical, and the Proposed Hoover Gulch Natural Area) will remain unchanged.

c. Description of Land Management Allocations

Land management areas were developed to emphasize different land management and goals. Each allocation contains a number of compatible activities or management practices that could occur on a single piece of land. The 10 land management areas used in the formulation of, and in the analysis of, the alternatives in this document are described below. Each describes the general goals and policies which would direct land management under that designation. A number of goals and policies apply uniformly to all land management allocations. They are the following:

1. All relevant laws and regulations apply.

2. Forest Soils Management, Streamside Management Unit, Visual Resource Management, and snag policies apply as do applicable water quality standards.

3. Known threatened or endangered floral and will be adequately protected.

4. Existing legal rights are retained for the duration of the permit.

5. Mineral, power, flood, water, and other entry rights are retained except where otherwise stated.

6. The Forest Off-Road Vehicle (ORV) Plan applies except where otherwise modified.

7. Lands acquired through exchange or purchase of fee title will be allocated to the appropriate adjoining management areas under the plan finally adopted.

Each of the 5 alternatives reflects a different blend of land management. The blends differ both in the total number of acres allocated to each land management area and in the location of the allocation. Hence, each alternative reflects a different pattern of land management.

Management Area 1

Management Area 1 is a coordinated resource management area and will be managed to: 1) obtain full timber yield consistent with land capabilities and applicable management constraints; 2) provide a high level of good quality big game habitat; 3) protect soil watershed, visual, wildlife, fisheries, and provide and protect recreational resources; 4) protect and maintain small areas containing exceptional aesthetic, scenic, historic, archeologic, geologic, botanic, zoologic, or scientific features.

Programmed timber harvest will be planned for suitable acres within these areas. Silvicultural techniques will be utilized to attain maximum timber yield consistent with the land capabilities and applicable management constraints in each location. These techniques will include partial cutting and clearcutting for regeneration purposes. Methods of harvesting the timber will vary depending on land characteristics and applicable management constraints as will slash disposal methods. Planting will be the primary method of reforestation. Crop species will be released from brush competition where needed. Precommercial and commercial thinnings will be applied as appropriate to maintain timber yield objectives. Roads will be developed to serve the requirements of the logging system and to protect the physical environment of the area. Habitat diversity will be maintained for wildlife with species requiring earlier stages of plant succession (including big game

species) favored over the long term. Existing and planned developed and dispersed recreation facilities will be maintained to meet the recreation use demand for the area. These facilities include campgrounds, picnic grounds, and trails. New recreational facilities generally will not be planned but may be developed where justified. These areas generally will be open to off-road vehicles. Small areas having exceptional aesthetic, scenic, historic, archeologic, geologic, botanic, zoologic, or scientific features may be designated for special management. Land acquisitions and/or exchanges will occur as appropriate. Special use permits for powerline rights-of-way and other uses may be issued as appropriate. Watershed monitoring sites will be initiated as appropriate. Modification of the physical environment must meet or exceed the applicable visual quality objective (depending on location). The Siskiyou Soils Management Policy, the Siskiyou Streamside Management Policy, applicable water quality standards, and other relevant management constraints apply to this area.

Management Area 2

Management Area 2 is a dispersed recreation area and will be managed to: 1) protect and essentially retain the existing natural qualities, including the visual qualities; 2) protect or preserve small areas within the allocation which represent exceptional aesthetic, scenic, historic, archeologic, geologic, botanic, zoologic, or scientific features; 3) protect soil, watershed, aesthetic, wildlife, fisheries, timber, mineral and recreation resources; 4) develop and utilize recreation, timber, and mineral resource potentials as consistent with the goals above. The existing environment will be essentially retained in order to protect the existing natural values. Ecosystems will be maintained. Alterations in vegetation types and patterns will be relatively small in scale and dispersed in time and space. Except where otherwise specified, modification of the physical environment must meet or exceed the visual quality objective of retention. Habitat, floral, and faunal diversity will be maintained. Known specimens of rare, threatened, or endangered floral or faunal species will be protected. Small areas within the allocation representing exceptional aesthetic, scenic, historic, archeologic, geologic, botanic, zoologic, or scientific features may be designated for special management designed to protect or preserve these features. Dispersed recreation opportunities will generally be maintained or improved. Existing recreation trails, in general, will be maintained. New recreational facilities may be developed as consistent with recreation experience levels 1 or 2, and with the goals for the area. Off-road vehicles generally will be restricted to existing roads in the area. Some generally low-impact roads or tracks may exist in these areas at present. A limited amount of additional road construction may be planned if consistent with the primary goals and with land characteristics. Any new construction must be minimum-impact in substance. Programmed timber harvest will be planned in accessible locations where consistent with the primary goals of the area and with land capabilities. Silvicultural techniques consistent with the above will be utilized (up to 30% of potential estimated to be possible). Salvage harvests may be permitted under catastrophic conditions as consistent with the objectives for the area. Mineral, power, flood control, and water entries will be consistent with the goals of the area. These entries will be withdrawn, if necessary, to meet the goals. Watershed monitoring sites will be initiated as appropriate. Land acquisitions and/or exchanges may applicable water quality standards, and other relevant management constraints apply to these areas.

The Siskiyou and Windy Valley areas will be managed to: 1) protect and retain the existing natural qualities; 2) protect or preserve small areas within the allocation which have exceptional aesthetic, scenic, historic, archeologic, geologic, botanic,

zoologic, or scientific features; 3) provide opportunities for recreational experience levels 1 and 2; and 4) protect soil, watershed, aesthetic, wildlife, fisheries, timber, and recreational resources.

The existing environment will be fully retained to protect the natural values. Modification of the physical environment must meet or exceed the visual quality objective of retention. Small areas within the classification having exceptional aesthetic, scenic, historic, archeologic, geologic, botanic, zoologic, or scientific features will be managed to protect or preserve these features. Dispersed recreational opportunities consistent with recreational experience levels 1 or 2 and with the first two goals will be maintained or developed. Portions of stream channels may be modified to improve fish habitat where practical and when consistent with the first two goals. Programmed timber harvest will not be planned; however, timber, removal may be permitted under catastrophic conditions. Road construction will not be planned in these areas. Off-road vehicles will not be permitted. Power, flood, and water entries will be withdrawn. Mineral entry will be withdrawn, if necessary, to meet the primary goals. Consolidation of National forest lands within these allocations will be sought through land acquisitions, as appropriate. Existing wildlife habitat will be retained and known specimens of rare, threatened, or endangered floral or faunal species will be protected.

Management Area 4

Management Area 4 is a scenic river area and will be managed to: 1) maintain or enhance the condition of the high quality scenery and the largely undeveloped character of its shoreline; 2) maintain or improve the quality of the water which enters the river; 3) maintain or improve the fish and wildlife habitat; 4) provide opportunities for river-oriented recreation which is consistent with the area's largely undeveloped nature and dependent on the river's free-flowing condition; and 5) utilize other resources and permit other activities which maintain or enhance the quality of the wildlife habitat, river fishery, scenic attractions, and recreation values.

Primary emphasis will be given to protecting the aesthetic, scenic, historic, archeologic, and scientific features of the areas. Recreational developments may include trails, camping facilities, and other developments consistent with recreation experience levels 2 or 3 (minimal to intermediate development) and with protection of the site. Programmed timber harvest will be planned only where it will meet the primary goals of the area. Except as needed for temporary access for fire control purposes or for removal of trees killed by fire, windthrow, insects, or disease, as determined necessary, there will be no construction of new roads. These areas will be withdrawn from power, flood control, or water entries. Mineral entry will be withdrawn if necessary to be consistent with the primary goals of the area. Land acquisitions and/or exchanges will occur as appropriate. Rare, threatened, or endangered floral or faunal species will be protected. Off-road vehicles will not be permitted. Management activities that modify the physical environment must meet or exceed a visual quality objective of retention.

In this Planning Unit, this category includes all lands and water along the Illinois River which has a proposed designation of "Scenic" in the river study.

Management Area 5

Management Area 5 is the recommended wild river area and will be managed to: 1) preserve the essentially primitive character and outstanding scenic attractions;

2) maintain or improve the quality of the water which enters the river; 3) maintain or improve the fish and wildlife habitat; and 4) provide opportunities for river-oriented recreation which is dependent on the free-flowing condition of the river and consistent with the primitive character of the surroundings.

Primary emphasis will be given to the protection and retention of aesthetic, scenic, historic, archeologic, and scientific features of the areas. Recreational developments may include trails and camping facilities consistent with recreation experience levels 1 and 2 (primitive to minimal) and with protection of the site. Residences established in the area may continue but additional residences will not be permitted. Programmed timber harvest will not be planned, however, timber removal may be permitted under catastrophic conditions. Roads will not be permitted in these areas. These areas have been or will be withdrawn from mineral, power, flood control, or water entries. Land acquisitions and/or exhanges will occur as appropriate. Rare, threatened, or endangered floral and faunal species will be protected. Off-road vehicles will not be permitted. Management activities that modify the physical environment must meet or exceed a visual quality objective of retention.

Management Area 6

Management Area 6 is a fisheries/watershed area and will be managed to: 1) maintain or improve water quality and the watershed characteristics of the area; 2) maintain old-growth forest characteristics for dependent wildlife species; 3) protect or enhance spawning and rearing habitat for anadromous fish; and 4) develop and utilize timber, recreation, and mineral potentials as consistent with the above goals.

These areas are supplemental to the Siskiyou Streamside Management Unit Policy and other policies designed to protect or enhance water quality and fisheries habitat. Areas will average 1/8 mile horizontal distance from each streambank but may vary in width in a given area, depending on the on-site characteristics. Areas generally will be managed in a near-natural condition. Management activities (i.e., stabilization of slides, etc.) designed to improve water quality or fisheries habitat may be undertaken where appropriate. Recreational developments generally will not be planned; however, trails and camping facilities consistent with recreational experience levels 1 and 2 (primitive to minimal) and protection of the site may be permitted if compatible with the primary goals of the area. Programmed timber harvest will be planned only where the primary goals of the area can be met. Off-road vehicles will not be permitted. These areas will be withdrawn from power, flood control, and water entries. Mineral entry will be withdrawn only if necessary to meet the area goals. Rare, threatened, or endangered floral and faunal species will be protected. Management activities that modify the physical environment must meet or exceed the visual quality objective of either retention or partial retention (depending on location).

Management Area 7

Management Area 7 is a recreations/fisheries area and will be managed to: 1) provide opportunities for a wide range of recreational activities which are oriented to the river and enhanced by its free-flowing condition; 2) maintain or improve the quality of water which enters the river; 3) improve fish and wildlife habitat; 4) maintain or enhance the quality of scenery; and 5) utilize other resources and permit other activities to the extent that they do not significantly lower the quality of wildlife habitat, river fishery, scenic attractions, or recreation value.

These areas will average 1/8 mile horizontal distance from each streambank but may vary in width in a given area depending on the on-site characteristics.

Recreational facilities will be developed to provide a wide range of river-oriented recreational opportunities. Developments may include trails, camping facilities, boating facilities, picnicking facilities, and roads. These facilities will be consistent with recreational experience levels 2 through 5 (minimal to highly developed) and with protection of the site. Some additional expansion of structures will be permitted. Programmed timber harvest will be planned. Roads may be constructed as necessary to meet the goals of the area. These areas will be withdrawn from power or flood entries. Mineral entry will be withdrawn if necessary to be consistent with the primary goals of the area. Land acquisitions and/or exchanges will occur as appropriate. Rare, threatened, or endangered floral or faunal species will be protected. Off-road vehicles will generally be permitted. Management activities that modify the physical environment must meet or exceed either retention or partial retention visual quality objectives.

Management Area 9

Management Area 9 is a research natural area and will be managed to: 1) preserve examples of all significant natural ecosystems; 2) provide educational and research areas for ecological and environmental studies; and 3) preserve gene pools for typical and rare and endangered plants and animals.

Primary emphasis will be given to the preservation of natural features of interest for educational and scientific values. Educational or research projects will, generally, be of nondestructive character; however, manipulation which simulates natural processes will be allowed to maintain desired communities or organisms. Neither roads nor timber harvest will be permitted. Off-road vehicles will not be permitted. Recreation will be allowed, provided the activity does not significantly alter the area's natural features. These areas will be withdrawn from mineral, power, flood control, or water entires. Rare threatened or endangered floral and faunal species will be protected. The visual quality objective for these areas is preservation. In this Planning Unit, this category refers to the Wheeler Creek Natural Area and the proposed Hoover Gulch Natural Area.

Management Area 10

Management Area 10 is a botanical area and will be managed to preserve the essentially primitive character and outstanding botanical attractions.

Primary emphasis will be given to preserving the botanical and other features of the areas. Existing trails will be permitted but additional recreational development will not be permitted. Neither roads nor timber harvest will be permitted. Off-road vehicles will not be permitted and these areas will be withdrawn from mineral, power, flood, or water entries. Rare, threatened, or endangered floral and faunal species will be protected. The visual quality objective for these areas is preservation.

In this Planning Unit, this category refers to the Babyfoot Lake Unusual Interest Area - Botanical.

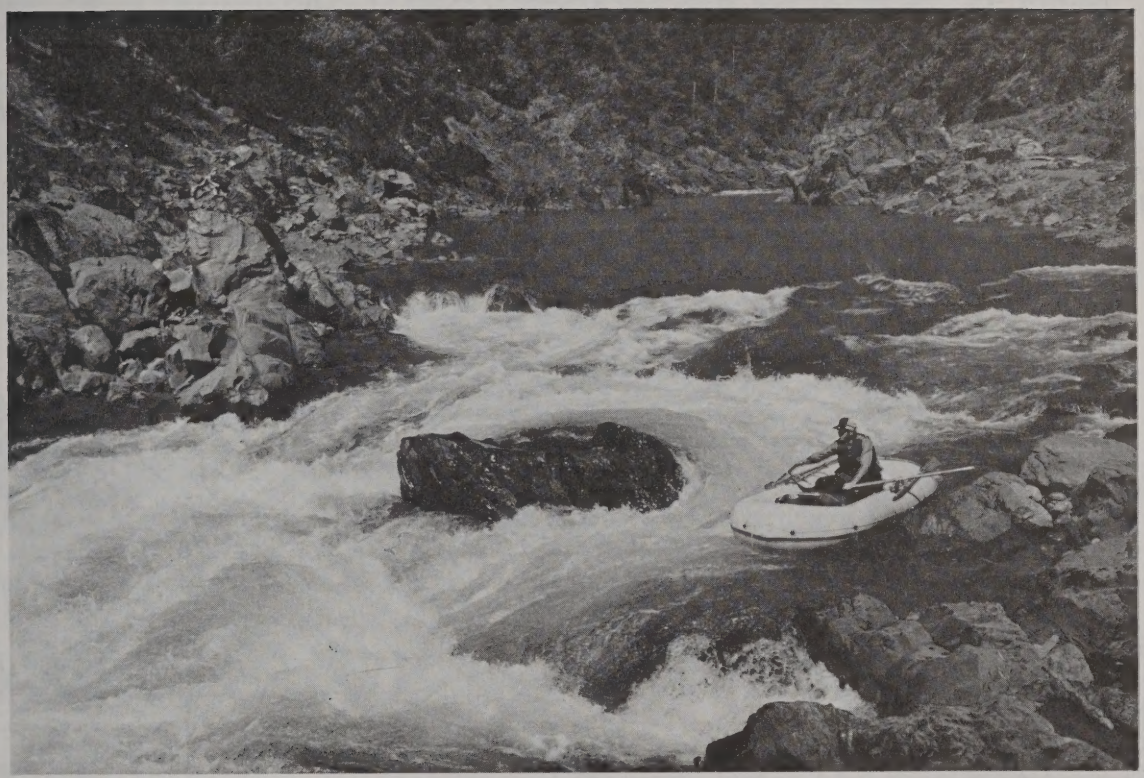
Management Area 11

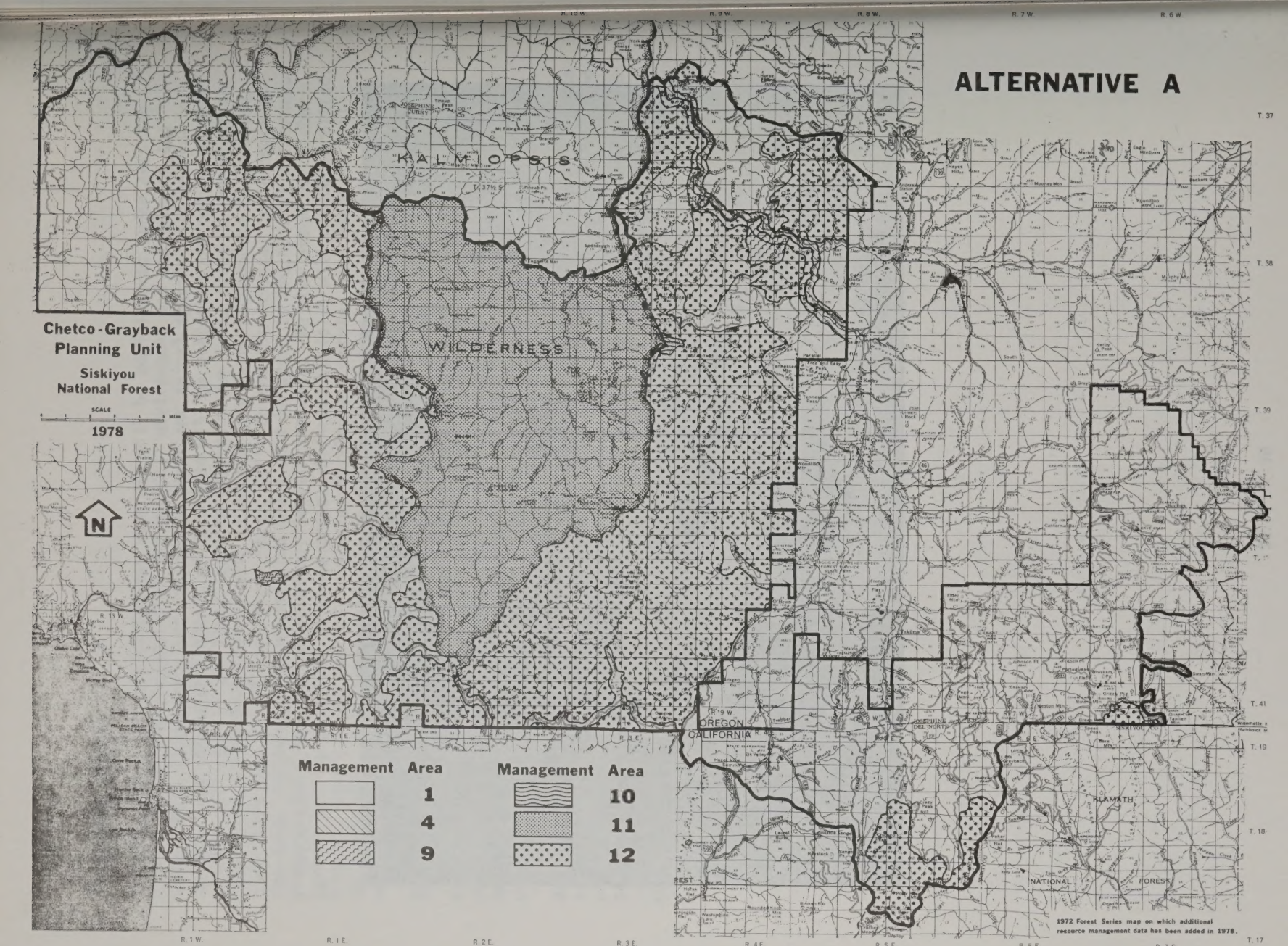
Management Area 11 is a wilderness area and will be administered under existing directions for the protection of the physical environment and solitude of the area. Rare, threatened, and endangered plant and animal species will be protected. The unique environment of this area will be preserved and only ecological changes will occur. The visual quality objective for these areas is preservation. Trails and trailhead entrances will be developed only to accommodate planned use consistent with social objectives, e.g., solitude and the physical environment of the area. Wilderness Recommendation Areas will be added to the Natural Wilderness Preservation System by Congressional legislation only. Neither roads nor timber harvest will be permitted in these areas. Off-road vehicles will not be permitted. Mineral, power, flood control, and water development entries have been, or will be, withdrawn. (All Congressionally-designated Wilderness will be withdrawn from mineral entry after December 31, 1983.)

Management Area 12

Management Area 12 will defer land management allocation decisions for approximately 10 years in the inventoried roadless areas. The goals will be to: 1) delay or defer the land management allocation decision; and 2) maintain all present land management allocation options.

Development activities which would change the character of the inventoried roadless areas will not be planned. Timber harvest will not be planned but may be permitted under catastrophic conditions. All of the acres in the commercial forest land base (from which the Forest programmed annual harvest is calculated) in these areas will be withdrawn from that base. The Forest programmed annual harvest will be immediately reduced, commensurate with the acreage reduction. Road construction will not be planned.




ALTERNATIVE A
Chetco-Grayback
Planning Unit
Siskiyou
National Forest
SCALE
1978
N
KALMIOPSIS
WILDERNESS
OREGON
CALIFORNIA
KLAMATH
NATIONAL
FOREST
Management Area
1
4
9
Management Area
10
11
12
1972 Forest Series map on which additional resource management data has been added in 1978.

a. Development of Alternatives

The development of the alternatives began with the evaluation of the input from the public meetings and the responses from the alternatives brochure. Information, ideas and concerns of the public were meshed together with legislative mandates and administrative directives. Other general criteria used in the analysis were existing resources, land capabilities, social and economic values, and environmental effects. Although there are an unlimited number of possibilities, five alternatives were selected and evaluated because they represent a wide range of land management options.

b. Description of Alternatives

Alternative A: Alternative A is termed the "no action" alternative. This amenity-oriented alternative defers the management decision concerning the present roadless areas (169,235 acres) until sometime in the future. Existing land management will continue outside Management Area 12. This alternative consists of six land management allocations which are described in Section III-c, Description of Land Management Allocations. This alternative represents the present situation as it is today.

Table IV A-1 shows the land management allocations under Alternative A.

Table IV A-1. Land Management Allocations Under Alternative A for the Chetco-Grayback Planning Unit.

Allocation	Acreage	% of Unit Acreage
Management Area 1	202,034	43.5
Management Area 12	169,235	36.4
Management Area 11 (Existing)	88,675	19.0
Management Area 4	2,950	0.7
Management Area 9	1,608	0.3
Management Area 10	210	0.1
TOTAL Planning Unit	464,712	100.0

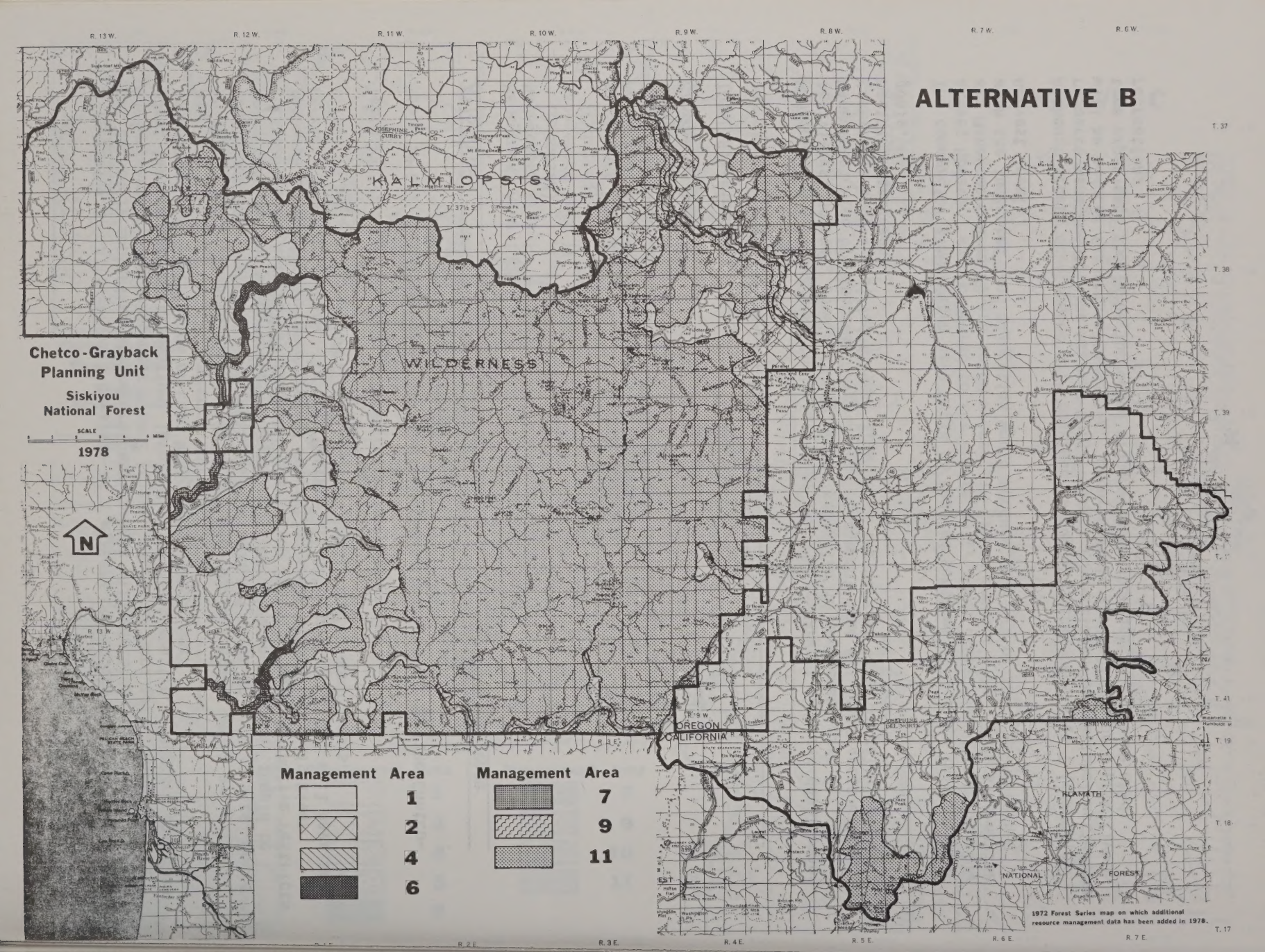
A preliminary report has been completed on the Illinois River. The report recommended that the area in this Planning Unit from the Forest boundary near Josephine Creek downstream to Briggs Creek be allocated as a scenic river and be included in the National Wild and Scenic River System. It will be protected until a decision is made by Congress.

This amenity-oriented alternative has one proposed and one existing research natural area, a botanical area, and a wilderness.

Timber production will continue on those areas outside the roadless areas. Mining claims may be filed on most of the known valuable mineral bearing deposits with the exception of the wilderness area after December 31, 1983.

Recreational activities relating to roads such as driving for pleasure, camping, hunting, and fishing would decrease because of the lack of access to Management Area 12 (deferred areas), however, backpacking opportunities and similar primitive forms of recreation will be maintained at approximately current levels.

Current levels of old-growth-dependent species should be maintained at existing levels under this alternative. Cavity-nester species should increase while sediment levels and big game species will decrease slightly under this alternative.


ALTERNATIVE B
Chetco-Grayback
Planning Unit
Siskiyou
National Forest
SCALE
1978
KALMIOPSIS
WILDERNESS
OREGON
CALIFORNIA
KLAMATH
NATIONAL
FOREST
Management Area
1
2
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6
Management Area
7
9
11
1972 Forest Series map on which additional resource management data has been added in 1978.

Alternative B. Alternative B consists of a mixture of resource uses and activities, but basically emphasises the natural environment with additions of Management Area 11 (wilderness) and Management Area 2 (dispersed recreation) areas. There are eight land management allocations involved in this alternative. They are described in Section III, Description of Land Management Allocations.

In this amenity-oriented alternative all of the roadless areas, which are either contiguous to an existing wilderness or five thousand acres or more in size, would be recommended for wilderness. Congress will determine whether they should be included in the National Wilderness Preservation System. This alternative restricts resource activities on the dispersed recreation areas and the Illinois River Corridor or Alternative A. To some degree, all of these allocations will have an effect on the local, regional, and national social and economic goals.

Table IV B-1 shows the land allocations under Alternative B.

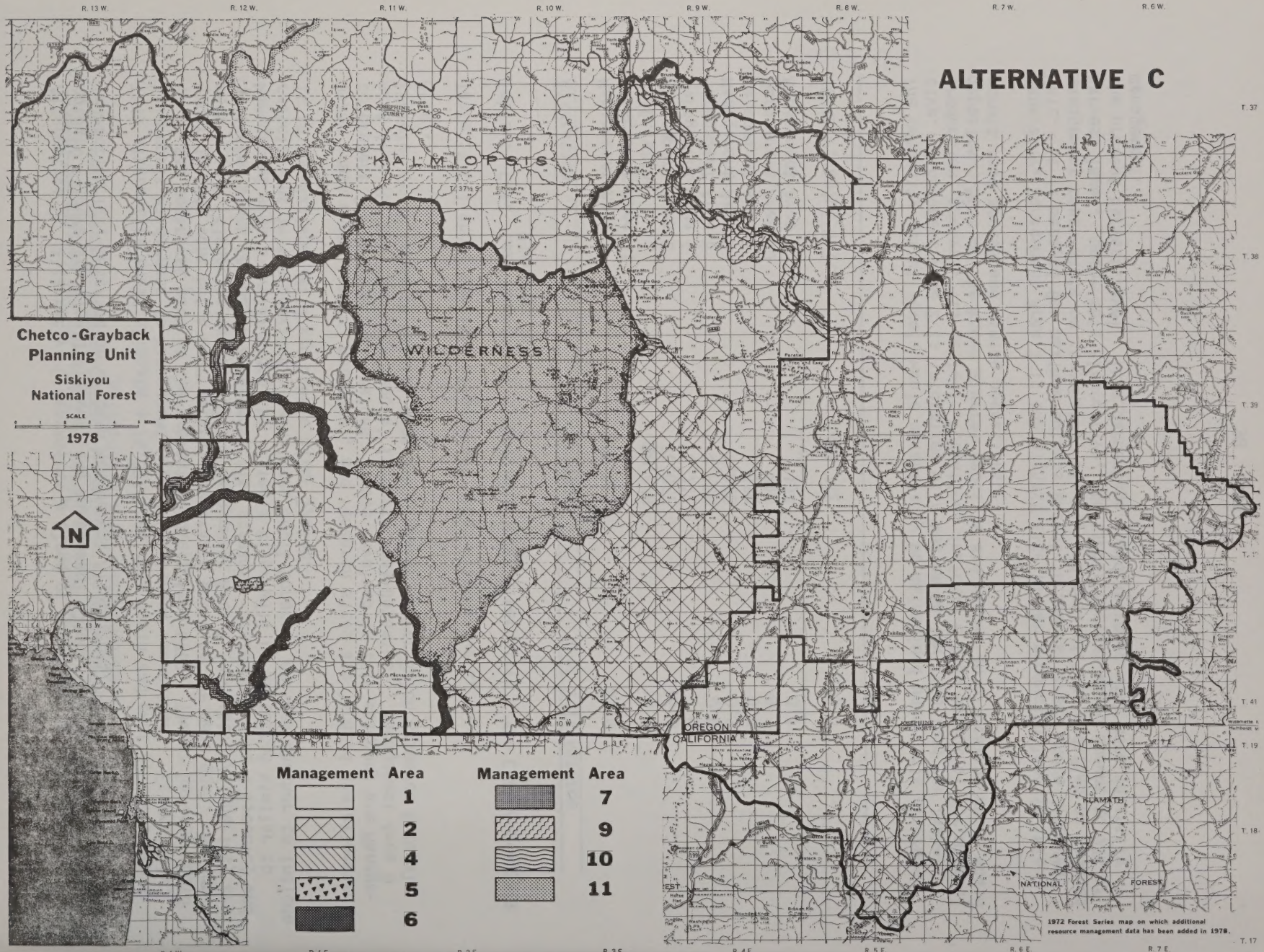
Table IV B-1. Land Management Allocations Under Alternative B for the Chetco-Grayback Planning Unit.

Allocation	Acreage	% of Unit Acreage
Management Area 1	177,525	38.2
Management Area 11 (Proposed)	170,719	36.8
Management Area 11 (Existing)	88,675	19.0
Management Area 2	21,556	4.6
Management Area 4	2,950	0.7
Management Area 7	1,580	0.3
Management Area 6	1,373	0.3
Management Area 9	334	0.1
TOTAL Planning Unit	464,712	100.0

Management Area 1 produces the majority of the timber harvest and road development activities; however, some activity may be scheduled in Management Area 2, Management Area 6, Management Area 7, and Management Area 4. These areas will contribute only a modified harvest from which the harvest level is calculated to meet the management goals.

The commercial timber land base would be reduced substantially under this alternative; however, when compared to the entire unit, these areas (Management Area 11, and Management Area 2) are below average in timber productivity. This alternative with the indicated land allocation would produce only 67% of the present earned harvest level.

Although access development will continue throughout Management Area 1 (commodity resource management), the maximum potential for road-related recreational activities will be reduced for this alternative. Opportunities for solitude or a primitive type experience should be increased along with an increase in trail-related recreation.


ALTERNATIVE C
KALMIOPSIS
WILDERNESS
Chetco-Grayback
Planning Unit
Siskiyou
National Forest
SCALE
1978
N
OREGON
CALIFORNIA
KLAMATH
NATIONAL
FOREST
Management Area
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1972 Forest Series map on which additional resource management data has been added in 1978.

Alternative C. Alternative C represents a blend of both amenity and commodity outputs. There are nine different land management allocations which are described in Section III, Description of Land Management Allocations.

This alternative would allocate a 76,027 acre area south and east of the present Kalmiopsis Wilderness to Management Area 2 (dispersed recreation). Essentially, it is the southeast part of the present Roadless Area 6709. Timber harvest could occur in this zone but a near natural appearance would be the main goal. Management Area 6 (fisheries/watershed) and Management Area 7 (recreation/fisheries) are allocated along the major anadromous fish streams. Management Area 4 (scenic) and Management Area 5 (wild) along the Illinois River will be protected similar to restrictions in the previous alternatives until Congress decides whether to include it in the National Wild and Scenic River System.

Other areas where scenic, botanical, and research sites are located are allocated to protect and enhance their values. Those involved in this category are Management Area 10 (Babyfoot Lake Special Interest Area-Botanical), Management Area 9 (Wheeler Creek Research Natural Area and Proposed Hoover Gulch Research Natural Area).

Table IV C-1 shows the land allocations under Alternative C.

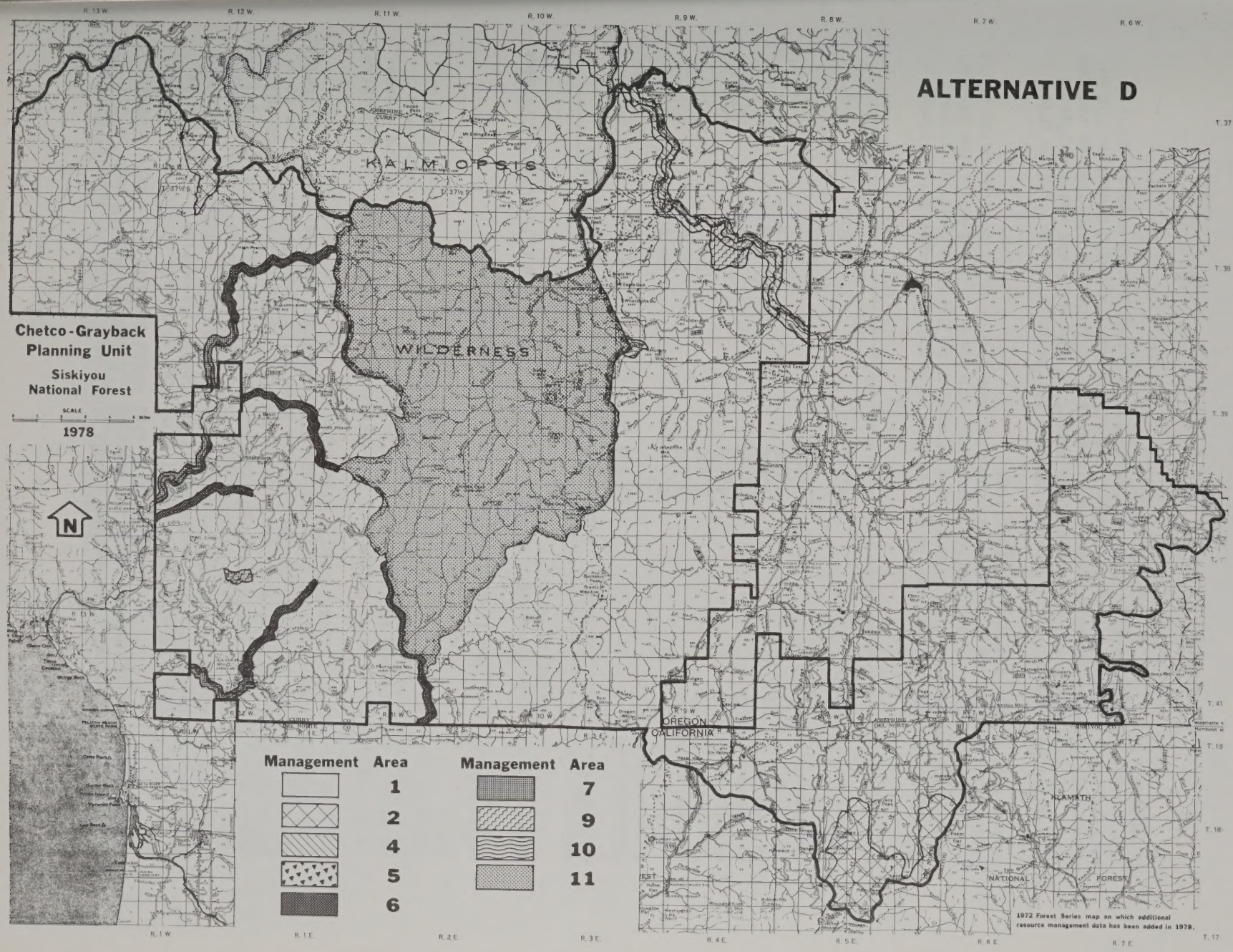
Table IV C-1. Land Management Allocations Under Alternative C for Chetco-Grayback Planning Unit.

Allocation	Acreage	% of Unit Acreage
Management Area 1	287,558	61.9
Management Area 11 (Existing)	88,675	19.0
Management Area 2	76,027	16.4
Management Area 4	4,712	1.0
Management Area 6	4,238	0.9
Management Area 9	1,608	0.3
Management Area 7	1,580	0.3
Management Area 10	210	0.1
Management Area 5	104	0.1
TOTAL Planning Unit	464,712	100.0

The commodity output levels would essentially be maintained under this alternative. Management Area 2 is intermixed with medium to low site land for timber production; however, its geologic formations indicate a high potential for mineral deposits. Most of the known mineral deposits are within an allocation which would permit road access and mining operations.

Generally, Management Area 1 is the highest site timber producing land in this Unit. It is managed for maximum outputs except in special areas where different management constraints on streamside, visual, and soil dictate modified or reduced harvest level. Under this alternative, the timber harvest would amount to 93% of the present harvest level. This percentage could increase with more intensive management.

Road-related recreation potentials should improve over the present as access is gained over Management Area 1. Backpacking opportunities on recreation trails should also be maintained under this alternative.


ALTERNATIVE D
Chetco-Grayback
Planning Unit
Siskiyou
National Forest
SCALE
1978
N
KALMIOPSIS
WILDERNESS
OREGON
CALIFORNIA
KLAMATH
NATIONAL
FOREST
Management Area
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Management Area
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1972 Forest Series map on which additional resource management data has been added in 1978.

Alternative D: Albernative D for the Chetco-Grayback Planning Unit is a commodity-amenity blend. The nine land management allocations are described and defined in Section III, Description of Land Management Allocations. This alternative supports a high level of commodity output (timber, mineral, etc.) and will assist the local, regional, and national goals by maintaining social and economic benefits near, or above, existing levels. Also, the alternative provides for a high level of amenity values by maintaining recreation potentials and natural qualities in the unique areas at Windy Valley, and the Siskiyou area in California. They are included in Management Area 2 in the Statement.

Table IV D-1 shows the land allocations under this alternative.

Table IV D-1. Land Management Allocations Under Alternative D for Chetco-Grayback Planning Unit.

Allocation	Acreage	% of Unit Acreage
Management Area 1	353,532	76.1
Management Area 11 (Existing)	88,675	19.0
Management Area 2	10,053	2.2
Management Area 4	4,712	1.0
Management Area 6	4,238	0.9
Management Area 9	1,608	0.3
Management Area 7	1,580	0.3
Management Area 10	210	0.1
Management Area 5	104	0.1
TOTAL Planning Unit	464,712	100.0

The Management Area 1 contains most of the land suitable for intensive timber management. Timber production will also occur on most of the areas designated Management Area 2, Management Area 6, Management Area 7, and Management Area 4; however, these areas will be harvested at a reduced rate (increased length of rotation) consistent with their primary goals. Development activities in these areas probably would only involve improvement of existing roads. The land base for these categories includes about 81% of the Unit's acres.

Most of the valuable mineral bearing deposits, with the possible exception of those already in Management Area 11, are within allocations permitting road access and machine exploration. In most cases, prospecting and mining will not be denied provided the goals of the area are complied with and existing mining laws are obeyed; however, in the wilderness mining claims may be filed only until December 31, 1983. Claims filed prior to that date may be operated provided they meet the requirements of the mining laws of the United States, and the wilderness Act, which describes how exploration and mining may be carried out within wilderness.

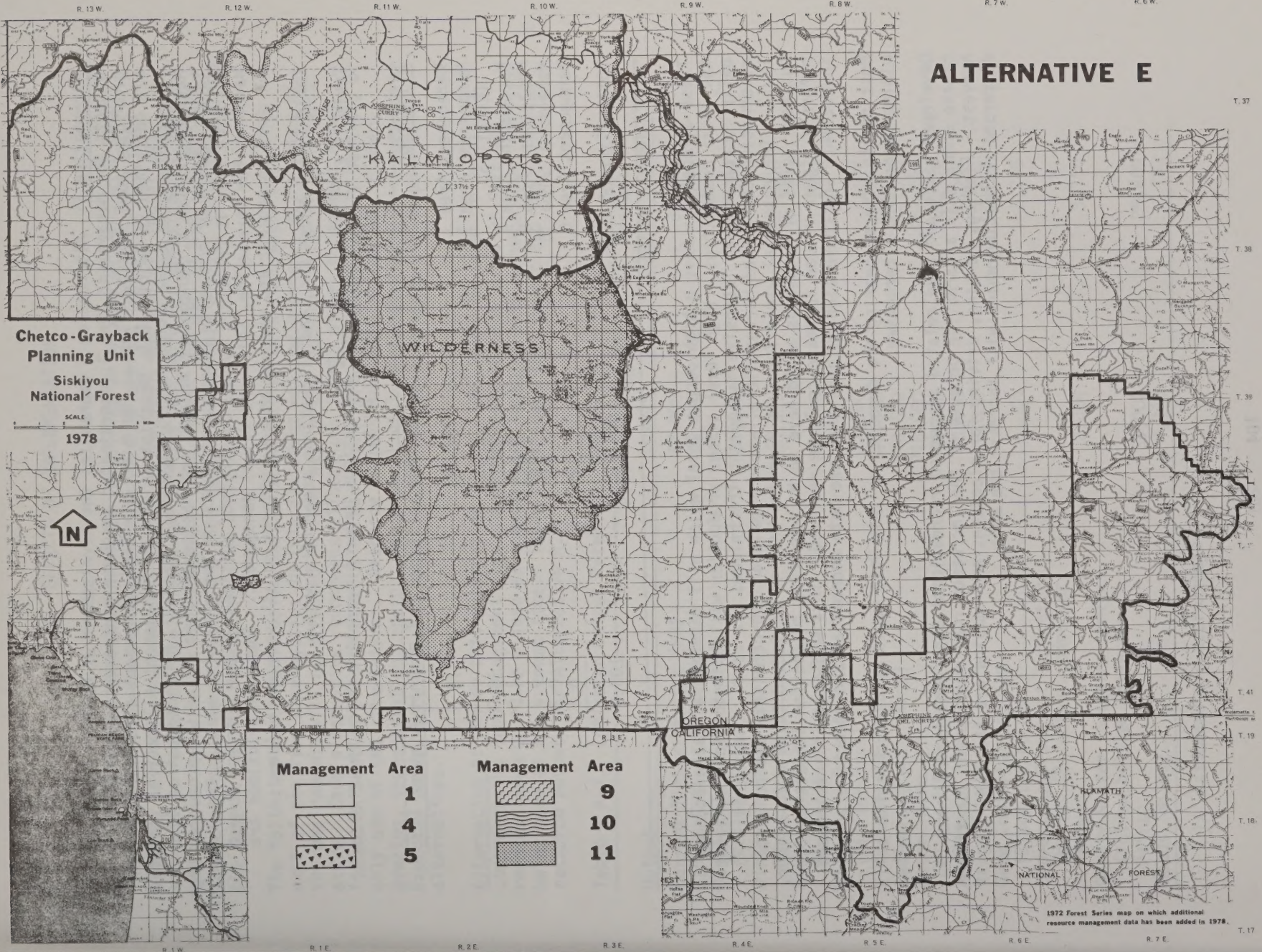
Alternative D should maintain, or slightly increase, the recreational opportunities on this Unit. Improved access will benefit the road related forms of

recreation, such as camping, driving for pleasure, and hunting and fishing activities. Management Area 6 provides for special zones along the Winchuck and Chetco Rivers. They provide access for recreation along a quarter-mile strip of the river.

The preliminary study on the Illinois River (Eight Dollar Mountain to Briggs Creek in this Planning Unit) to determine if it qualifies for a National Wild River is completed. The recommendation was to include it in the Wild and Scenic River System. The area from Briggs Creek to Eight Dollar Mountain would be allocated as scenic. Whether the river becomes a Wild River or not, the corridor and seen areas will be managed to retain the basic values described under Management Area's 5 and 6 in the Descriptions of Land Management Allocations, Section III.

This alternative allocates land for the protection and enhancement of scenic, botanical, fisheries, and natural values. The Management Area's will be managed as indicated under Section III, Description of Land Management Allocations.

ALTERNATIVE E



1972 Forest Series map on which additional resource management data has been added in 1978.

Alternative E: Alternative E emphasizes the development of maximum resource outputs for Management Area 1 (coordinated resource management) while still providing some amenity values. There are six land management allocations which are described in Section III, Description of Land Management Allocation. These allocations give added protection to Management Area 11, Management Area 4, Management Area 5, Management Area 9, and Management Area 10, while producing high level outputs of commodity resource products on the remaining areas. The commodity resource area is protected by the constraints outlined in the Siskiyou Forest Handbook for Streamside, Soil, and Visual Management. These restrictions are designed to protect and prevent adverse effects on all resource values.

Table IV E-1 shows the land allocations under Alternative D.

Table IV E-1. Land Management Allocations Under Alternative D for the Chetco-Grayback Planning Unit.

Allocation	Acreage	% of Unit Acreage
Management Area 1	369,403	79.5
Management Area 11 (Existing)	88,675	19.0
Management Area 4	4,712	1.0
Management Area 9	1,608	0.3
Management Area 10	210	0.1
Management Area 5	104	0.1
TOTAL Planning Unit	464,712	100.0

These allocations have a high output level which will maintain a viable economy in the local communities. High level timber production will be maintained or eventually increased when intensive management trechniques are used. Under this alternative the earned harvest level would remain at approximately the current level. The potential yield for this Planning Unit is estimated to be much higher, but many acres of hardwoods would have to be converted to conifer production before a higher volume increase could be realized. This would require increased investments and conversion methods that are both economical and effective.

Most of the mineral bearing ore deposits on this Unit would be available for mining under this alternative.

Developed sites and road related dispersed recreational opportunities will increase under this alternative because of the increased road development for timber harvest. Fishing, hunting, driving for pleasure, and camping are the types of dispersed recreation which will increase the most.

V. EFFECTS OF IMPLEMENTATION

Any land management plan that proposes activities on an area of land will result in various environmental effects. These effects are not limited to just the planning unit but extend beyond, involving physical, biological, social and economic variables. These effects can be both desirable and undesirable, depending upon an individual's interests and viewpoints. The goal of the land manager or decisionmaker is to maintain a high level of favorable effects while generating the most net public benefits.

The following section discusses the Environmental Effects that would result if each of the five alternatives in this Statement was implemented. All aspects of the environment will be affected in some way by the implementation of an alternative. Each alternative recommends allocations to the eleven Management Areas listed in Section III. A particular management area may occur in all, several, or only one of the alternatives. Resource outputs including recreation, timber, grazing, transportation, energy, and mineral will vary accordingly by alternative. Expected goods, services, and amenities will serve to measure and compare the alternatives.

Alternative A: Under this alternative, "no action" would be taken to develop a comprehensive land management plan. Approximately 169,235 acres of selected roadless area would be placed in a deferred allocation with no management decision being made at the present time. Table V A-1 shows the present and the potential resource outputs for Alternative A.

Table V A-1. Estimated Output Potentials Under Alternative A. 1/

Output	Potential Output Levels	Present Actual Output
Current Timber Harvest (MBF)	41,000	58,000
Timber Potential Yield (MBF)	86,600	58,000
Developed Site Recreation (Visitor-Days)	62,800	63,000
Dispersed (Road-Related) Recreation (Visitor-Days)	228,300	251,800
Dispersed (Trail-Related) Recreation (Visitor-Days)	116,500	11,000
Wilderness Recreation (Visitor-Days)	27,500	7,800
Wilderness (Acres)	88,675	88,675
Sediment (Cubic Yards)	118,500	122,900
Water (Acre-Feet)	2,716,000	2,767,500
Fuel Load (Tons/Acre)	64,000	63,300
Anadromous Fish (Fish)	68,100	65,500
Range (AUM)	2,830	1,350
Game Indicator Species (Black-tailed Deer)	5,000	5,200
Old-Growth-Dependent Indicator Species (Pileated Woodpecker Pairs)	2,060	1,100
Cavity-Nester Indicator Species (Yellow-bellied Sapsucker Pairs)	59,000	29,400
Roads (miles)	1,110	790

1/ Estimates are approximate.

The environmental effects or potential environmental effects which would result from Alternative A are summarized below. Some of the actions to be employed to minimize these effects are also listed where appropriate.

A. Air Quality

If all five of the alternatives were rated for air quality on a scale from one to five (one being low), this alternative would be rated No. 2 because of fewer timber harvest areas, less slash disposal, less road construction, and other industrial operations which would produce less pollution.

B. Fire

The risk of larger fires would be increased because of access problems into Management Area 12. The access problem would also increase the expense to control the fire and/or may increase the length of time between ignition and detection. Fuel loading will increase marginally under this alternative.

C. Fisheries, Soil, and Water

Under this alternative the potential number of anadromous fish increases about 4% above the present count. Sediment levels will decrease marginally. Water temperatures and water quality should remain at the current level.

Under this alternative desirable projects such as habitat improvement, on spawning bed, natural slide stabliization, and stream shading, are almost impossible to do on inaccessible Management Area 12.

The total water runoff on the Unit as a whole will be essentially unchanged; however, newly-developed areas will experience some increase in total runoff, quickflows, peak flows, and summer flows.

D. Future Options

Future land management options would be maintained in all inventoried roadless areas under this alternative. Short-term options would be reduced in Management Area 2.

E. Historic and Archeologic

Alternative A will not have any significant effects on historical or archeological sites. The State Historic Preservation Officer has reviewed the material documenting the "Determination of No Effect" for this Planning Unit and concurs with this determination for the project (see Appendix).

The project planning process for any ground-disturbing activities will include an on-the-ground inventory of cultural resource sites, districts, object, and structures, as required by Executive Order 11593. Compliance with 36CFR800 procedures will be documented in the project Environmental Analysis Report (EAR).

F. Minerals

Alternative, A should not affect the availability of important minerals. Most of the known valuable mineral deposits or mineral-bearing rock are open to entry and are accessible for exploration. The Kalmiopsis Wilderness will be closed to prospecting and exploration after December 31, 1983. Management Area 9 will be recommended for mineral withdrawal.

G. Noise

This alternative would not significantly alter the noise levels throughout most of the Unit; however, the noise level in Management Area 2 would be less detrimental because of the reduction of timber harvest or road development activities.

H. Recreation

This alternative will decrease the road-related dispersed recreational opportunities because of the unroaded areas. Trail-related dispersed recreation would not change. The quality of opportunities would be maintained for trail hikers in Management Area 12.

I. Roadless Area

Under this alternative, all RARE II, roadless areas will be placed in a deferred category of Management Area 12.

J. Socio-Economics

Alternative A will result in a reduction of direct and indirect jobs associated with the resources of the Planning Unit. The timber harvest will be reduced by 17 MM board feet which will result in decreasing the number of existing jobs by an estimated 29%, or 328 people. This would produce a substantial effect to the economy and the already unstable employment problem in Josephine and Curry counties. This situation could be alleviated somewhat in future years through intensive management, better utilization, genetically improved planting stock and/or fertilization. Although there appears to be a substantial number of fisheries, recreation and other-related jobs, available information makes it difficult to arrive at a quantified estimate.

Young, old, poorly educated, low income, and minority groups are likely to be severely impacted under this alternative. First, they are most likely to lose a job. Secondly, alternate job skills may not be well developed among many persons in these groups.

This alternative will definitely have some effect on the revenue payments to the local government in lieu of taxes. The reduction of volume and the withdrawal of approximately 169,235 acres will lower these payments to the county.

K. Timber

Alternative A would reduce the annual earned harvest level to an estimated 70% or 17 MM of the current Management Plan. Intensive management practices could increase the volume production over current levels. The potential yield could increase to approximately 87 MM board feet.

This alternative would tend to hold or preserve existing volumes for future (probably 10-15 years) considerations.

L. Vegetation

Relative to present trend, much larger areas would be subject to natural ecological changes. The percentage of shade in-tolerant and more commercially valuable timber species would decline under such conditions.

M. Visual

Alternative A would decrease the amount of man-dominated landscape because of the withdrawal of Management Area 12. The potential for a solitude and primitive experience would be greater under this alternative.

N. Wilderness

This alternative defers all decisions on the inventoried roadless areas until a later date; therefore, the opportunity for future wilderness recommendation remains available for this area.

O. Wildlife

Wildlife habitat favorable to the cavity nester and old-growth-dependent species would be maintained, resulting in potential increases in the indicator species such as the pileated woodpecker and yellow-bellied sapsucker.

The potential for big game animals under this alternative would decrease due to the absence of timber harvest activities which are favorable for habitat establishment.

Alternative B: This is an amenity-oriented alternative. All inventoried roadless area allocations are recommended for wilderness management. Table V B-1 compares the actual output level with the potential output level for this alternative.

Table V B-1. Estimated Output Potentials Under Alternative B. 1/

Output	Potential Output Levels	Present Actual Output
Current Timber Harvest (MBF)	39,000	58,000
Timber Potential Yield (MBF)	83,800	58,000
Developed Site Recreation (Visitor-Days)	59,500	63,000
Dispersed (Road-Related) Recreation (Visitor-Days)	209,400	251,800
Dispersed (Trail-Related) Recreation (Visitor-Days)	63,700	11,000
Wilderness Recreation (Visitor-Days)	80,400	7,800
Wilderness (Acres)	259,394	88,675
Sediment (Cubic Yards)	117,800	122,900
Water (Acre-Feet)	2,699,300	2,767,500
Fuel Load (Tons/Acre)	64,000	63,300
Anadromous Fish (Fish)	68,800	65,500
Range (AUM)	2,510	1,350
Game Indicator Species (Black-tailed Deer)	4,800	5,200
Old-Growth-Dependent Indicator Species (Pileated Woodpecker Pairs)	2,190	1,100
Cavity-Nester Indicator Species (Yellow-bellied Sapsucker Pairs)	61,100	29,400
Roads (miles)	1,070	790

1/ Estimates are approximate.

The environmental effects or potential environmental effects which would result from Alternative B are summarized below. Some of the actions to be employed to minimize these effects are also listed where appropriate.

A. Air Quality

This alternative would pollute the air less than any of the other alternatives due to less timber harvest, slash disposal, and road development activities. No development activities would occur in Mangement Area 11, 9 or 2. Only modified activity will occur in Management Area 4, 6, and 7.

B. Fire

This alternative would have effects similar to Alternative A. Risk of large fires because of access problems, and a marginal increase in fuel loading are factors involved under Alternative B.

C. Fisheries, Soil, and Water

The potential number of anadromous fish would increase marginally (5%) because of the undisturbed areas recommended for wilderness; however, habitat improvement measures to increase fish production in areas recommended for wilderness will be foregone. Also, sediment levels would decrease slightly and water quality, quantity, and temperature would remain at nearly the same level.

D. Future Options

This alternative would maintain the maximum number of long-term land management options for roadless and undeveloped areas in the Unit. Upon allocation of he recommended areas as wilderness, only Congress could change the land management.

Land management options, however, would be severely reduced in the wilderness recommended areas for 10 or more years (and indefinitely after wilderness allocation by Congress). As a result, the adverse affect on commodity outputs from the Unit would be both immediate and sizeable.

E. Historic and Archaeological

Management Area 11 (wilderness recommendation) would preclude any possibility of obliterating Cultural Resource sites by development activities; however, all areas that have any ground-disturbing activities will include an on-the-ground inventory of Cultural Resource sites, districts, object, and structures, as required by Executive Order 11593. Compliance with 36CFR800 procedures will be documented in the project Environmental Analysis Report (EAR).

F. Minerals

The availability of mineral bearing materials will be affected by a wilderness allocation because mining claims must be filed before January 1, 1984 in such areas. Those claims filed prior to that date may be operated under the requirements of the Mining Laws of the United States and The Wilderness Act. Management Area 9 will be recommended for withdrawal from mineral entry.

G. Noise

The noise level in Management Area 11 would be less detrimental due to no timber harvest or road development activities. Approximately 60% of the Unit would be managed in a near natural condition.

H. Recreation

Under this alternative, wilderness-related recreation potentials would increase because of the addition of wilderness acres. Road and trail-related recreation would be expected to decrease to some extent because of this situation. Developed site recreation would decline approximately 25%.

I. Roadless Area

Under this alternative all roadless areas are allocated to a wilderness designation or Management Area 11.

J. Socio-Economics

Alternative B will have a greater affect on socio-economic trends than any other alternative discussed. The reduced commodity outputs on the Unit will result in a loss of approximately 33%, or 362 existing jobs in the local economy. This would contribute heavily to the already unstable economical and employment problems in Josephine and Curry counties. Intensive management, better utilization, genetically improved planting stock, and/or fertilization, could improve this condition in future years. Although there appears to be a substantial number of fisheries, recreation, and other-related jobs, available information makes it difficult, if not impossible, to arrive at a quantified estimate. The enlarged wilderness recommendation area under this alternative would create relatively few new jobs. These possible increases would be at least offset by fewer potential jobs related to other forms of recreation (which have sharply reduced potentials under this alternative).

Young, old, poorly educated, low income, and minority groups are likely to be most severely impacted under this alternative. First, they are more likely to lose jobs. Secondly, alternate job skills may not be well developed among many persons in these groups.

A reduction in Management Area 1 will definitely have an effect on the revenue payments in lieu of taxes to the local government as well as the returns to the Federal Treasury.

K. Timber

Under this alternative the annual harvest level would be reduced to 67% of the current level. The intensive management practices could increase the harvest level above the present level. Management Area 11 will reduce the forest land base by removing it from commercial timber production.

L. Vegetation

Relative to present trends much larger areas would be subject to ecological changes only. The percentage of less shade-tolerant and more commercially-valuable timber species would decline under such conditions.

M. Visual

Alternative B will have the least amount of man-dominated landscape of all the alternatives. Management Area 11 will assure a primitive and solitude type atmosphere until Congress officially makes the areas wilderness. The visual allocation for this area is preservation.

N. Wilderness

This alternative restricts all management activities that would alter the landscape in Management Area 11. Congress will determine whether to include the roadless areas in the National Wilderness System.

O. Wildlife

Wildlife habitat favorable for cavity-nesters and old-growth-dependent species would be maintained under this alternative; however, wildlife habitat favorable to big game species would decrease due to reduced timber harvest activities.

Alternative C: This is an amenity-commodity blend alternative. The area southeast of the present wilderness would be designated as Management Area 2 where harvest activities would be modified. Also, Management Area 2 would be established two areas where primitive conditions would be maintained. Table V C-1 compares the actual output level with the potential output level for this alternative.

Table V C-1. Estimated Output Potentials Under Alternative C. 1/

Output	Potential Output Levels	Present Actual Output
Current Timber Harvest (MBF)	54,000	58,000
Timber Potential Yield (MBF)	115,300	58,000
Developed Site Recreation (Visitor-Days)	73,600	63,000
Dispersed (Road-Related) Recreation (Visitor-Days)	348,000	251,800
Dispersed (Trail-Related) Recreation (Visitor-Days)	116,600	11,000
Wilderness Recreation (Visitor-Days)	27,500	7,800
Wilderness (Acres)	88,675	88,675
Sediment (Cubic Yards)	120,300	122,900
Water (Acre-Feet)	2,729,500	2,767,500
Fuel Load (Tons/Acre)	60,900	63,300
Anadromous Fish (Fish)	65,500	65,500
Range (AUM)	2,960	1,350
Game Indicator Species (Black-tailed Deer)	6,000	5,200
Old-Growth-Dependent Indicator Species (Pileated Woodpecker Pairs)	1,540	1,100
Cavity-Nester Indicator Species (Yellowbellied Sapsucker Pairs)	45,800	29,400
Roads (miles)	1,120	790

1/ Estimates are approximate.

A. Air Quality

This alternative should have little affect on the air quality as compared to existing levels. Smoke management guides will continue to be used to assure satisfactory air quality. Activities that produce smoke or dust will primarily occur on Management Area 1.

B. Fire

Fuel loading should not change to any great extent from present levels. Fast initial attack on wildfire will be aided by increased access. This will reduce the potential for large fires. Road related activities tend to increase the risk of ignition.

C. Fisheries

Soil disturbances could occur almost anywhere in Management Area 1 due to timber harvest and road construction activities. This would also have an effect on sediment, water temperatures and water quality. Sediment production and water temperatures tend to increase immediately following removal of shading vegetation, however, this is usually only a temporary condition. Vegetation and litter cover reduce the detaching and transporting power of water, while increasing the structure and stability of the soil; removing the vegetation can cause temporary fluctuations in flows.

Fish production will remain stable under this alternative.

D. Future Options

After some years land management options for most of the currently designated roadless area acreage will be substantially reduced. At that point, options for wilderness, research natural area, administrative roadless, and other non-development allocations will be lost; however, most land use options involving some degree of development will be maintained, perhaps indefinitely.

Short-term options are reduced for use of the areas under allocations essentially maintaining natural conditions.

Areas allocated for development under this alternative will be gradually developed over a period of one or more decades. Allocated areas which essentially maintain natural conditions can be reallocated to development allocations, if needs in the future so warrant. Both of these tend to extend future options.

E. Historic and Archeologic

This alternative will not have any significant effects on historical or archeological sites. The State Historic Preservation Officer has reviewed the material documenting the "Determination of No Effect" for this Planning Unit and concurs with this determination for the project (see Appendix).

The project planning process for any ground-disturbing activities will include an on-the-ground inventory of cultural resource sites, districts, object, and structures, as required by Executive Order 11593. Compliance with 36CFR800 procedures will be documented in the project Environmental Analysis Report (EAR).

F. Minerals

This alternative will not affect the availability of important mineral bearing material except that all mining claims must be filed before January 1, 1984 in the wilderness area. Mining activities will be operated under existing regulations. In the event of formal allocation, Proposed Research Natural Area's would be recommended for withdrawal from mineral entry.

G. Noise

The noise levels developed from management activities under this alternative would be marginally lower than current levels. The primary reason is the Management Area 2 (76,027 acres) which provides for less access and mechanical activity.

H. Recreation

The developed site and road-related recreational experience under this alternative would increase slightly. As continued road construction will make more areas accessible. The quality of the opportunities for trail hikers will decline somewhat as contacts with developments and other symbols of civilization will increase over the present level.

I. Roadless Area

Under this alternative, Roadless Area's 6701 (Siskiyou), most of 6709 (South Kalmiopsis), and a portion of 6180 (Windy Valley) are included in Management Area 2. The remainder of the roadless areas are included in Management Area 1.

J. Socio-Economics

This alternative will marginally reduce the existing jobs either directly or indirectly dependent on the resources of this Unit. In future years jobs could increase with intensive management, better utilization, genetically improved planting stock, and/or fertilization. Although there appears to be a substantial number of fisheries, recreation, and other-related jobs, they account for a relatively small percentage of the timber-related jobs. Available information makes it difficult, to make a quantified estimate.

K. Timber

The annual harvest level would be reduced to approximately 93% of the current level under this alternative. Using intensive management practices, could increase the harvest approximately 50% above the existing level.

Preliminary estimates indicate that the potential output level is considerably higher (over 100%) than the actual output level. The basic calculation of the present allowable cut, using existing volumes and growth figures (Hanzlik Formula), is responsible for the low actual output. Many potentially productive areas on the westside of the Unit have either low or nonexistent conifer volumes; therefore, they do not contribute any volume to the harvest level figure. Future timber yields from these areas are dependent on an investment for site preparation or in a conversion project.

Approximately 38% of this Unit will be maintained in a natural to near natural condition. The remaining portion of the Unit will continue to be converted to managed second-growth stand at about the present rate.

L. Vegetation

Relative to the present situation, effects on vegetation will remain essentially unchanged. Ecological change will continue in areas to be left in a natural state. Areas under development will be returned to an earlier successional stage before ecological change relentlessly continues.

Management under this alternative would maintain populations of all existing floral species; however, there will tend to be less floral diversity in intensively managed second-growth stands. The percentage of commercially valuable species, such as Douglas-fir, will tend to be substantially higher than in existing old-growth forests. This generally reflects the present situation and, therefore, represents no change in trend.

M. Visual

This alternative will increase over the current rate amount of man-nated landscape within the Unit; however, approximately 38% of the Unit will be in a land management allocation which will protect the area in a near natural condition. The Visual Management Plan will protect additional areas of old growth.

In addition to providing visual benefits, Visual Resource Management constraints tend to increase development costs and decrease the possibility of approaching full biologic potential for timber production.

N. Wilderness

This alternative will not affect the wilderness on the Unit. However, as development or access progresses into the Unit. Possible areas for wilderness designation will be reduced. Congress recently added 31,600 acres to the existing Kalmiopsis Wilderness in this Unit.

O. Wildlife

This alternative will continue to provide essential habitat for black-tailed deer, Roosevelt elk, and other game species.

Population levels of all game species will at least be maintained, or tend to increase, as undeveloped areas are accessed for timber harvest.

Alternative C will adequately protect any known specimen of threatened and endangered species on this Unit. Some of the land management allocations (38%), Visual Management Areas, and Streamside Management Zones all provide protection to wildlife because of either a modified harvest rate or a near natural condition. The Snag Management guidelines will help preserve habitat by ensuring that adequate numbers of snags useful to wildlife are retained, even in fully developed areas.

Alternative D: Alternative D is a commodity-amenity blend. It provides a mix that considers fisheries, recreation, research natural area, botanical areas, wild and scenic rivers and resource management areas. Table V D-1 shows potential and actual output levels generated by this alternative.

Table V D-1. Estimated Output Potentials Under Alternative D. 1/

Output	Potential Output Levels	Present Actual Output
Current Timber Harvest (MBF)	55,000	58,000
Timber Potential Yield (MBF)	117,600	58,000
Developed Site Recreation (Visitor-Days)	79,100	63,000
Dispersed (Road-Related) Recreation (Visitor-Days)	401,300	251,800
Dispersed (Trail-Related) Recreation (Visitor-Days)	116,600	11,000
Wilderness Recreation (Visitor-Days)	27,500	7,800
Wilderness (Acres)	88,675	88,675
Sediment (Cubic Yards)	121,700	122,900
Water (Acre-Feet)	2,764,700	2,767,500
Fuel Load (Tons/Acre)	63,300	63,300
Anadromous Fish (Fish)	65,500	65,500
Range (AUM)	3,000	1,350
Game Indicator Species (Black-tailed Deer)	7,000	5,200
Old-Growth-Dependent Indicator Species (Pileated Woodpecker Pairs)	1,201	1,100
Cavity-Nester Indicator Species (Yellow-bellied Sapsucker Pairs)	39,500	29,400
Roads (miles)	1,180	790

1/ Estimates are approximate.

The environmental effects or potential environmental effects which would result from Alternative D are summarized below:

A. Air Quality

This alternative will have little effect on the air quality as compared with existing levels. Timber harvest, road construction, and slash burning will continue at or near present rates and will have only a temporary, localized effect on air quality. Smoke management guides will continue to be used to assure satisfactory air quality.

B. Fire

Fuel loading should not change to any great extent from present levels. Slash disposal and silvicultural techniques will be applied to minimize the slash hazard in timber harvest areas, with full consideration for soil and watershed values.

Fire suppression efforts will be aided by increased access; however this tends to increase risk of ignition because more people use the area. The potential for large fires would be reduced.

C. Fisheries, Soil, and Water

Generally, the sediment production in this Unit will remain about the same as the present levels. A temporary sediment increase may result immediately following a development activity. Accelerated sediment production could actually be decreased somewhat by modification of the fuel management procedures. Vegetation and litter cover reduce the detaching and transporting power of water, while increasing the structure and stability of soil.

Water temperatures may tend to increase slightly after removal (timber harvest, construction) of shading vegetation; however, harvest units are usually well dispersed over a drainage, so the effect will not be great. Silvicultural techniques and planting or leaving hardwoods along streams will provide enough shade to alleviate most temperature problems.

Water quantity will be essentially unchanged by this alternative; however, activities in an area adjacent to streams, such as clearcutting, can cause temporary fluctuations in flows. Under sustained yield timber management total watershed flow changes are usually undetectable.

Habitat improvement, such as improving or creating spawning beds, stabilizing natural slides, or removing debris jams, will become more feasible with the increased access possible under this alternative.

The potential for anadromous fish production over a 100-year rotation may decline to approximately 95% of the current level of fish production. Current assessment of the anadromous salmonid populations indicate that all streams on this Unit are either increasing or are stable.

D. Future Options

If this alternative is implemented, after some years land management options for most of the currently designated roadless area acreage will be substantially reduced. At that point, options for wilderness, research natural area, administrative roadless, and other non-development allocations will be lost; however, most land management options involving some degree of development will be maintained, perhaps indefinitely.

Short-term options are reduced for use of the areas under allocations essentially maintaining natural conditions.

Areas allocated for development under this alternative will be gradually developed over a period of one or more decades. Allocated areas which essentially maintain natural conditions can be reallocated to development allocations, if needs in the future so warrant. Both of these tend to extend future options.

E. Historic and Archeologic

This alternative will not have any significant effects on historical or archeological sites. The State Historic Preservation Officer has reviewed the material documenting the "Determination of No Effect" for this Planning Unit and concurs with this determination for the project (see Appendix).

The project planning process for any ground-disturbing activities will include an on-the-ground inventory of cultural resource sites, districts, object, and structures, as required by Executive Order 11593. Compliance with 36CFR800 procedures will be documented in the project Environmental Analysis Report (EAR).

F. Minerals

This alternative should not affect the availability of important minerals. Most of the known valuable mineral deposits or mineral-bearing rock are open to entry and are accessible for exploration. The Kalmiopsis Wilderness will be closed to prospecting and exploration after December 31, 1983. Management Area 9 will be recommended for mineral withdrawal. Mining operations will be operated under existing regulations.

G. Noise

Under this alternative additional timber harvest and road construction activities resulting from future intensive timber management practices may contribute to a slight increase in noise pollution but it should not significantly differ from the present conditions.

H. Recreation

The potential opportunities for all dispersed recreation should increase slowly. Continued road construction at the present rate will make accessible more miles of road for dispersed type of recreation, such as driving for pleasure, hunting, and fishing.

The quality of the opportunities for trail hikers will decline somewhat as contacts with developments and other symbols of civilization will increase over the present level.

I. Roadless Area

Roadless Area 6701 (Siskiyou), and part of 6180 (Windy Valley) are included in Management Area 2. Management Area 1 contains all the other inventoried roadless areas.

J. Socio-Economics

This alternative will marginally reduce the existing jobs either directly or indirectly dependent on the resources of this Unit. In future years jobs could increase with intensive management, better utilization, genetically improved planting stock, and/or fertilization. Although there appears to be a substantial number of fisheries, recreation, and other-related jobs, they account for a relatively small percentage of the timber-related jobs. Available information makes it difficult, if not impossible, to make a quantified estimate.

This alternative should continue to maintain a stable output of resources which will ensure stable revenue payments to the local governments in lieu of taxes.

No significant effects are expected on civil rights, minority groups, low income persons, or rural poverty, from this alternative.

K. Timber

The annual harvest level under this allternative will be about 95% of the current level. With intensive management practices this output could be increased.

Preliminary estimates indicate that the potential output level is considerably higher (over 100%) than the actual output level. The basic calculation of the present allowable cut, using existing volumes and growth figures (Hanzlik Formula), is responsible for the low actual output. Many potentially productive areas on the westside of the Unit have either low or nonexistent conifer volumes; therefore, they do not contribute any volume to the programmed annual harvest figure. Future timber yields from these areas are dependent on an investment for site preparation or a conversion project.

A substantial acreage of old growth will be maintained in a natural condition in wilderness, botanical, research natural, and dispersed recreation areas. These land allocations will total approximately 22% of the Unit under this alternative. This does not include other areas that require a modified cut prescription, because they are designated as Visual Management areas or streamside management zones.

Other areas in the special or reduced harvest category are Management Area's 6, 7, and 4. The remaining old-growth stands will continue to be converted to managed second-growth stands at about the same rate as at present.

L. Vegetation

Relative to the present situation, effects on vegetation will remain essentially unchanged. Ecological change will continue in areas to be left in a natural state. Areas under development will be returned to an earlier successional stage before ecological change relentlessly continues.

Management under this alternative would maintain populations of all existing floral species; however, there will tend to be less floral diversity in intensively managed second-growth stands. The percentage of commercially valuable species, such as Douglas-fir, will tend to be substantially higher than in existing old-growth forests. This generally reflects the present situation and, therefore, represents no change in trend.

M. Visual

This alternative will increase over the current rate the amount of man-dominated landscape within the Unit; however, approximately 24% of the Unit will be in a land management allocation which will protect the area in a near natural condition. The Streamside and Visual Management Plan will protect additional areas of old growth.

In addition to providing visual benefits, Visual Resource Management constraints tend to increase development costs and decrease the possibility of approaching full biologic potential for timber production.

N. Wilderness

This alternative will not affect the wilderness on the Unit. However, as development or access progresses into the Unit. Possible areas for wilderness designation will be reduced. Congress recently added 31,600 acres to the existing Kalmiopsis Wilderness in this Unit.

O. Wildlife

This alternative will continue to provide essential habitat for black-tailed deer, Roosevelt elk, and other game species.

Population levels of all game species will at least be maintained, or tend to increase, as undeveloped areas are accessed for timber harvest.

Alternative D will adequately protect any known specimen of threatened and endangered species on this Unit. Some of the land management allocations (24%), Visual Management Areas, and Streamside Management Zones all provide protection to wildlife because of either a modified harvest rate or a near natural condition. The Snag Management guidelines will help preserve habitat by ensuring that adequate numbers of snags useful to wildlife are retained, even in fully developed areas.

Alternative E: Alternative E is a commodity oriented alternative which emphasizes multiple-use opportunities. Table V E-1 shows potential and actual output levels generated by this alternative.

Table V E-1. Estimated Output Potentials Under Alternative E. 1/

Output	Potential Output Levels	Present Actual Output
Current Timber Harvest (MBF)	58,000	58,000
Timber Potential Yield (MBF)	123,400	58,000
Developed Site Recreation (Visitor-Days)	81,400	63,000
Dispersed (Road-Related) Recreation (Visitor-Days)	417,400	251,800
Dispersed (Trail-Related) Recreation (Visitor-Days)	116,600	11,000
Wilderness Recreation (Visitor-Days)	27,500	7,800
Wilderness (Acres)	88,675	88,675
Sediment (Cubic Yards)	128,174	122,900
Water (Acre-Feet)	2,831,900	2,767,500
Fuel Load (Tons/Acre)	54,100	63,300
Anadromous Fish (Fish)	64,800	65,500
Range (AUM)	3,360	1,350
Game Indicator Species (Black-tailed Deer)	7,800	5,200
Old-Growth-Dependent Indicator Species (Pileated Woodpecker Pairs)	1,390	1,100
Cavity-Nester Indicator Species (Yellow-bellied Sapsucker Pairs)	38,100	29,400
Roads (miles)	1,230	790

1/ Estimates are approximate.

The environmental effects or potential environmental effects which would result from Alternative E are summarized below:

A. Air Quality

This alternative will have little effect on the air quality as compared with existing levels. Timber harvest, road construction, and slash burning will continue at or near present rates and will have only a temporary, localized effect on air quality. Smoke management guides will continue to be used to assure satisfactory air quality.

B. Fire

Fuel loading will tend to be somewhat lower than the current level because of increased management activities such as timber harvest, slash treatment, and road building.

Fire suppression efforts will be aided by increased access; however, this tends to increase risk of ignition because more people use the area. The potential for large fires would be reduced.

C. Fisheries, Soil, and Water

Anadromous fish production would decrease (1%) slightly from the current level. Sediment production would increase approximately 4% while water yields will increase about 2% above current levels, water temperatures and water quality tend to increase following some management activities (timber harvest, road construction), however, these fluctuations are temporary.

Although this alternative does not contain Management Area 6 allocation, the existing Streamside and Soil Management Policies afford adequate protection for the important anadromous fish producing streams.

D. Future Options

Future land management options would be reduced in the unroaded areas; however, prospects of rapid development in the near future would be very limited and uncertain because of the characteristics of the area.

E. Historic and Archeologic

This alternative will not have any significant effects on historical or archeological sites. The State Historic Preservation Officer has reviewed the material documenting the "Determination of No Effect" for this Planning Unit and concurs with this determination for the project (see Appendix).

The project planning process for any ground-disturbing activities will include an on-the-ground inventory of cultural resource sites, districts, object, and structures, as required by Executive Order 11593. Compliance with 36CFR800 procedures will be documented in the project Environmental Analysis Report (EAR).

F. Minerals

Most of the mineral deposits would be available for mining in this alternative. They are open to entry and accessible for exploration. Exceptions are the Kalmiopsis Wilderness which will be closed to prospecting and exploration after December 31, 1983. Management Area 9 will be recommended for mineral withdrawal. Mining operations will be operated under existing regulations.

G. Noise

Noise pollution will be increased slightly by this alternative because of the increased timber harvest, road construction, and other contributing management activities.

H. Recreation

Developed site and road related dispersed recreation (hunting, fishing, and driving for pleasure) would increase under this alternative. Management activities which develop the transportation system for access is the primary reason for the increase.

The quality for trail hiking opportunities will decline somewhat as development and other symbols of civilization are contacted.

I. Roadless Area

All roadless areas are in Management Area 1 under this alternative.

J. Socio-Economics

This alternative will maintain the existing jobs either directly or indirectly dependent on the resources of this Unit. In future years jobs could increase with intensive management, better utilization, genetically improved planting stock, and/or fertilization. Although there appears to be a substantial number of fisheries, recreation, and other-related jobs, they account for a relatively small percentage of the timber-related jobs. Available information makes it difficult, if not impossible, to make a quantified estimate.

K. Timber

The annual harvest level would remain at its present level. Intensive management practices will substantially increase the timber production in this Unit.

Preliminary estimates indicate that the potential output level is considerably higher (over 100%) than the actual output level. The basic calculation of the present allowable cut, using existing volumes and growth figures (Hanzlik Formula), is responsible for the low actual output. Many potentially productive areas on the westside of the Unit have either low or nonexistent conifer volumes; therefore, they do not contribute any volume to the programmed annual harvest figure. Future timber yields from these areas are dependent on an investment for site preparation or a conversion project.

L. Vegetation

Relative to the present situation, effects on vegetation will remain essentially unchanged. Ecological change will continue in areas to be left in a natural state. Areas under development will be returned to an earlier successional stage before ecological change relentlessly continues.

Management under this alternative would maintain populations of all existing floral species; however, there will tend to be less floral diversity in intensively managed second-growth stands. The percentage of commercially valuable species, such as Douglas-fir, will tend to be substantially higher than in existing old-growth forests. This generally reflects the present situation and, therefore, represents no change in trend.

M. Visual

This alternative will increase over the current rate amount of man-dominated landscape within the Unit. The Streamside and Visual Management Plan will protect additional areas of old growth.

In addition to providing visual benefits, Visual Resource Management constraints tend to increase development costs and decrease the possibility of approaching full biologic potential for timber production.

N. Wilderness

This alternative will not affect the wilderness on the Unit. However, as development or access progresses into the Unit. Possible areas for wilderness designation will be reduced. Congress recently added 31,600 acres to the existing Kalmiopsis Wilderness in this Unit.

O. Wildlife

This alternative will continue to provide essential habitat for black-tailed deer, Roosevelt elk, and other game species.

Population levels of all game species will at least be maintained, or tend to increase, as undeveloped areas are accessed for timber harvest.

Alternative E will adequately protect any known specimen of threatened and endangered species on this Unit. Some of the land management allocations (21%), Visual Management Areas, and Streamside Management Zones all provide protection to wildlife because of either a modified harvest rate or a near natural condition. The Snag Management guidelines will help preserve habitat by ensuring that adequate numbers of snags useful to wildlife are retained, even in fully developed areas.

Relationship Between Local Short-Term Uses of Man's Environment and Maintenance and Enhancement of Long-Term Productivity

Long term productivity means the continued ability of land to produce commodity and amenity values for future generations. If soil productivity are altered beyond a short term recovery period the capability of long-term productivity is protected.

Effects of short-term uses on the various resources were discusssed for the five alternatives. The effects of these on the maintenance of long-term productivity is expected to be as follows:

The amenity values associated with roadless areas will decrease somewhat over the long term under Alternative's C, D, and E. Change will occur in the roadless areas as they are gradually developed over a period of years. All alternatives will have some areas that will remain in a primitive condition and the forest visitor can expect the maximum opportunity for experiencing isolation or solitude on both the short and long-term uses.

Some of the existing roadless areas will eventually be accessed and harvested, making them available for road-related dispersed recreation (driving for pleasure, hunting, etc.). Timber management activities will produce a diversified vegetative type throughout the rotation cycle. The amount of timber harvest will not change much over the short term, however, the long-term productivity will increase substantially as the old-growth stand are eliminated and as intensive management practices are applied on the higher site land. Domestic livestock grazing should increase over the Unit as timber is harvested and grass is seeded for erosion control purposes. All of the alternatives will provide various levels of sustained non-declining yield of timber on those acres allocated to timber management.

The productivity of all anadromous fish streams on this Unit should not be affected to any great extent. Temporary increases in sediment levels and water temperature may occur but acceptable levels of water quality will remain fairly constant over the long term. Soil movement will continue at approximately the same level as present over the long term; however, temporary fluxuations will continue over a short interval until revegetation is completed. The Siskiyou Streamside Management Policy and the Siskiyou Soil Management Policy dictate the methods, or techniques, required to ensure that water quality standards are met.

Alternative's C, D, and E should not have any affect on the accessibility or the availability of important mineral bearing rock or valuable ore deposits in this Unit unless they are located within the Kalmiopsis Wilderness where they will be closed to prospecting and exploration after December 31, 1983.

In all alternatives, some existing wildlife species habitat will be degraded somewhat in some areas for short periods of time, but in no case will activities displace any species from the Unit. Wildlife species, including species dependent on old-growth forest and species requiring tree cavities for nesting, will be adversely affected by Alternative's C, D, and E. Population levels generally will reflect these changes and lower levels will be sustained.

Road construction to facilitate principal activities such as timber harvesting may reduce the productivity of the land occupied by these roads to produce vegetation.

Irreversible and Irretrievable Commitment of Resource

Implementation of Alternative's C, D, and E would tend to commit most of the inventoried and additional roadless areas to some degree of roadbuilding and timber harvest which would preclude future consideration for wilderness designation. Although this action may not be totally irreversible it could interupt certain natural ecological processes with a possible loss of a viable gene pool for some flora and fauna species in those areas. Most of these gene pools will be preserved in the natural or near natural land management allocations or if any area of scientific or special value is discovered, they will be administratively classified as a SPECIAL INTEREST AREA for protection and for public use, study, and enjoyment.

The allocation of the roadless areas to uses other than wilderness would constitute an irreversible loss. Although Congress would always retain the power to reallocate these areas as wilderness at some later date, the development of these areas through timber harvesting, road construction, and other intensive management activities would change the wilderness character for the foreseeable future.

Discovery and use of mineral resources and road rock would result in an irreversible commitment of resources.

Energy expended in carrying out management activities would be an essentially irreversible loss.

Soil losses are irreversible. Even under the most carefully controlled conditions, management activities will result in some soil disturbance. Once this soil is eroded by wind or water it is almost impossible to restore. Rock pits developed on road building activities are considered irreversible commitments to the land. Surfacing removed and placed on roads would not be replaced.

The destruction or damage of historic or cultural resources would be an irreversible loss. All alternatives specifically provide for protecting such resources. However, some of these resources may not have been discovered yet. If management activities were to disturb them before their significance was known, the damage probably could not be reversed. The possibility for this to happen is greatest in alternatives that provide for the highest level of timber production and road construction.

All alternatives require constraints that irretrievably affect potential timber, water, and forage yields. In other words, constraints required for the protection of other resources such as wildlife habitat, water quality, recreation, and visual values, prevent the full attainment of wood fiber, water yield, and forage production. Although these constraints could be removed at some time in the future, the interim loss is irretrievable.

Wildlife species dependent on old-growth forest habitat will continue to decline over a long period of time as the old-growth timber is harvested. Gradual harvest of the timber, Visual Management objectives, Streamside Corridors, and many of the Land Management Allocations with their natural characteristics should enable the species to perpetuate themselves without significant population losses; however, the loss of old-growth timber habitat for some forms of wildlife is irretrievable, and it would take 200 or more years to replace old-growth once it is cut.

Intensive management activities could result in an irretrievable loss of the natural character of the landscape. It would take several decades to restore the natural appearance once it was changed.

Activities in slash disposal, timber harvest, reforestation, and recreation site improvement will result in an irretrievable loss of habitat for some species of wildlife.

Loss of economic benefits, such as jobs and income, are irretrievably lost under land management allocations which forego full timber production.

Summary of Probable Adverse Environmental Effects Which Cannot be Avoided

Some adverse environmental effects which cannot be avoided may result from the alternatives in this Statement. They are listed as follows:

Air pollution will be caused by burning logging residues and road clearing slash. To reduce adverse environmental effects, smoke management guidelines are used for all burning projects. Noise, dust, smoke, and emissions from management activities will pollute the air and environment with all alternatives. Alternative's A and B will have less in part on the Forest environment because of fewer disturbing activities.

Increased development of the roadless areas in Alternative's C, D, and E increases the risk of wildfire because more people use the area; however, better timber utilization, increased markets, and more efficient logging systems will decrease the fuel loading process to some extent. Suppression action would be more effective.

Management activities (logging, road construction) will increase the sediment levels in the Unit. Generally this is only a temporary situation that can be alleviated somewhat by adequate drainage and revegetating (seeding and mulching) cut and fill slopes on road construction projects. Sophisticated logging equipment (skyline and helicopter) is capable of harvesting timber with very little ground disturbances. Periods of heavy runoff could increase the sediment; however, it is not expected to exceed the water quality standards of Oregon's Department of Environmental Quality. Water temperatures may temporarily increase in some areas as mature sawtimber is harvested.

Over a long period of time, the potential production of anadromous fish could decline to approximately 95% of the current level. The potential for sedimentation compacting or covering some spawning gravels is increased with logging and grazing activities.

The harvesting of timber increases the man-dominated character of the Unit. On timber producing allocations, much of the aesthetic value of old growth timber will be lost. Short-term visual impairment will occur prior to slash disposal and revegetation efforts following logging.

Timber harvesting will reduce habitat for some wildlife species dependent upon mature trees; however, a substantial amount of area will be left in a natural or nearly natural condition (24%). Viable population levels will be maintained in all alternatives. Logging and thinning slash may temporarily hinder the free movement of big game.

Alternative A will increase long term management options. Alternative B will reduce both long-term and short-term management options. Alternative C, D, and E will reduce both short- and long-term land management allocations and management options. Long-term options will steadily be reduced over one or more decades as development of the roadless areas progresses. Such an incremental progression tends to preserve future options for relatively long periods of time.

Although noise levels should not change from the present condition, increased access adjacent to the roadless areas could be a factor affecting a person's feeling of isolation and solitude.

Some soil degradation will occur through management activities that cause compaction, displace or destroy protecting surface biomass and litter, or disturb the soil itself. Domestic grazing, timber harvest, road construction, concentrated camping or trail use, site preparation, etc., all have the potential to cause soil damage.

From an economic standpoint, restricting full timber yield on commercial forest land reduces employment in timber related industries and lowers income to county budgets and federal treasury.

VI. EVALUATION OF ALTERNATIVES

Land management decision-making involves the analysis and evaluation of a startling number of variables. These include economic, environmental, physical, and other technical factors and public input. The latter has been examined in the "Consultation With Others" section. The matrix which follows provides comparative data for most of the other important variables.

Estimates are based on the best available data obtained from on-the-ground study and from other sources. The most important aspect about all of these estimates is their relative values. Numerous factors can vary the absolute values.

The importance of individual variables is itself variable. Some variables may be key variables for certain reasons. Also, it should be noted that the importance of a given variable will vary among different citizens. Each reader should analyze and evaluate the data in this matrix along with the rest of the document. This will aid the reader in better defining the tradeoffs which must be known for sound decision-making. A comparison of land management alternatives based on comparative data follows:

Table VI - 1. Statewide Planning Goals.

Statewide Planning Goals: 1/ 2/	DEGREE OF SUPPORT FOR GOALS PROVIDED BY EACH ALTERNATIVE 3/				
	Alt. A	Alt. B	Alt. C	Alt. D	Alt. E
Citizen Involvement	S	S	S	S	S
Land Management Planning	S	S	S	S	S
Forest Lands	W	W	S	S	S
Open Spaces, Scenic and Historic Areas and Natural Resources	S	S	S	S	W
Air, Water and Land Resources Quality	S	S	S	S	S
Areas Subject to Natural Disasters and Hazards	S	S	S	S	S
Recreational Needs	S	S	S	S	S
Economy of the State	N	N	S	S	S
Transportation	S	S	S	S	S
Energy Conservation	S	S	S	S	W

1/ Goals are shown in Appendix.
2/ The subjects of the following goals are not present in or are not applicable to the Chetco-Grayback Planning Unit: Agricultural Lands; Housing; Public Facilities and Services; Urbanization; Willamette River Greenway; Estuarine Resources; Coastal Shorelands; Beaches and Dunes; Ocean Resources.
3/ Estimated degree of support provided each goal by each alternative limited to the extent each goal can apply to National Forest lands in this Planning Unit.

S Generally supportive

W Weak or uncertain support

N Generally non-supportive

Table VI - 2. Alternative Potentials by Output Levels.

Physical Output:	Present Situation Actual	Alternative Potential Output Levels Alt. A	Alt. B	Alt. C	Alt. D	Alt. E
Current Timber Harvest (MBF)	58,000	41,000	39,000	54,000	55,000	58,000
Timber Potential (MBF)	58,000	86,600	83,800	115,300	117,600	123,400
Developed Site Recreation (Visitor-Days)	63,000	62,800	59,500	73,600	79,100	81,400
Dispersed (Road-Related) Recreation (Visitor-Days)	251,800	418,210	386,351	652,297	737,700	764,664
Dispersed (Trail-Related) Recreation (Visitor-Days)	11,000	116,510	63,700	116,600	116,600	116,600
Wilderness Recreation (Visitor-Days)	7,800	27,500	80,400	27,500	27,500	27,500
Wilderness Acreage (Acres)	88,675	88,675	259,394	88,675	88,675	88,675
Sediment (Cubic Yards)	122,900	118,500	117,800	120,300	121,700	128,174
Water (Acre - Feet)	2,767,500	2,716,000	2,699,300	2,729,500	2,764,700	2,831,900
Fuel Load (Tons/Acre)	63,300	64,000	64,100	60,900	63,300	54,100
Anadromous Fish (Fish)	65,500	68,100	68,800	65,500	65,500	64,800
Range (Animal Unit Month)	1,350	2,830	2,510	2,960	3,000	3,360
Game Indicator Species (Black-tailed Deer)	5,200	5,000	4,800	6,000	7,000	7,800
Old Growth-Dependent Species (Pileated Woodpecker Pairs)	1,100	2,060	2,190	1,540	1,201	1,390
Cavity-Nester Indicator Species (Yellow-bellied Sapsucker Pairs)	29,400	59,000	61,100	45,800	39,500	38,100
Roads (Miles)	790	1,110	1,070	1,120	1,180	1,230

Table VI - 3. Land Allocations by Alternatives.

Land Allocations:	Present Situation	Alt. A	Alt. B	Alt. C	Alt. D	Alt. E
Management Area 1	369,403	202,034	177,525	287,558	353,532	369,403
Management Area 2	0	0	21,556	76,027	10,053	0
Management Area 4	4,712	2,950	2,950	4,712	4,712	4,712
Management Area 5	104	0	0	104	104	104
Management Area 6	0	0	1,373	4,238	4,238	0
Management Area 7	0	0	1,580	1,580	1,580	0
Management Area 9	1,608	1,608	334	1,608	1,608	1,608
Management Area 10	210	210	0	210	210	210
Management Area 11 (Existing)	88,675	88,675	88,675	88,675	88,675	88,675
Management Area 11 (Proposed)	0	0	170,719	0	0	0
Management Area 12	0	169,235	0	0	0	0
TOTAL Planning Unit Acres	464,712	464,712	464,712	464,712	464,712	464,712

Table VI - 4. Estimate of Jobs Supported by Alternative.

Apparent Man-Years/MBF from County Consumption (1972).

	Curry	Josephine	Unit Average (50% each)
L&WP Employees	1,500.00	2,360.00	3,860.00
MMBF Consumed	202.9	324.7	527.6
Man-Years/MMFB	7.39	7.27	7.32

Assume consumption in Del Norte County, California is relatively insignificant and that consumption is split 50% each for Curry and Josephine. Also, assume 58 million of veneer layed up in addition to 242.7 million consumed otherwise for Josephine County (total = 300.7 million).

L&WP Industry Employment Multiplier (from DES)

Curry	2.1
Josephine	3.1
Average	2.6

Employment Related to Timber Harvest in Unit by Alternative

Table VI - 4-1. Assume Existing Timber Management.

Alternative	Programmed Harvest (MMBF)	Direct Jobs @ 7.3/MMBF	Indirect Jobs @ 2.6 Mult (1.6 x Direct)	Total Jobs	Change over Present Total Jobs	Percent
Present	58	423	677	1,100	0	0
A	41	299	478	777	(-) 328	(-) 30
B	39	284	454	738	(-) 362	(-) 33
C	54	394	630	1,024	(-) 76	(-) 7
D	55	401	642	1,043	(-) 56	(-) 5
E	58	423	677	1,100	0	0

Table VI - 4-2. Assume Intensive Timber Management (10% higher).

Alternative	Programmed Harvest (MMBF)	Direct Jobs @ 7.3/MMBF	Indirect Jobs @ 2.6 Mult (1.6 x Direct)	Total Jobs	Change over Present Total Jobs	Percent
Present	64	467	748	1,215	115	10
A	45	329	526	855	(-) 245	(-) 22
B	43	314	502	816	(-) 284	(-) 26
C	59	431	689	1,120	20	2
D	60	438	700	1,138	38	4
E	64	467	748	1,215	115	10

Table VI - 4-3. Assume the Maximum Potential Timber Outputs.

Alternative	Programmed Harvest (MMBF)	Direct Jobs @ 7.3/MMBF	Indirect Jobs @ 2.6 Mult (1.6 x Direct)	Total Jobs	Change over Present Total Jobs	Change over Present Percent
Present	123	897	1,436	2,334	1,234	112
A	87	635	1,016	1,651	551	50
B	84	613	981	1,594	494	45
C	115	839	1,343	2,182	1,082	98
D	118	861	1,378	2,239	1,139	104
E	123	897	1,436	2,334	1,234	112

Note: Wall projected about a 1% a year decrease in employment due to increasing labor productivity (32% decrease over base levels between 1970 and 2000).

Wall, Brian R. 1973. Employment Implications of Projected Timber Output in the Douglas-fir Region, 1970-2000. Pacific Northwest Forest and Range Experiment Station. Portland, OR.

Table VI - 5. Cost/Benefit Calculated Harvest Levels for the Chetco-Grayback Planning Unit

Alternative	Cost/Benefit Ratio 10%		Annual Equivalent	
	Benefit Ratio	Net Present Worth	Value of NPW	Years Planned
A	3.3702	180,734	18,229	50
B	3.8892	168,553	17,000	50
C	3.7561	215,400	21,725	50
D	3.7275	219,728	22,162	50
E	3.6319	226,877	22,883	50

Alternative	Net Present Worth		Accumulated
	10%	IRR	5 Year Cost
A	180,734	101	34,424
B	168,553	101	26,746
C	215,400	101	35,830
D	219,728	101	36,934
E	226,877	101	39,520

Non-numerical symbols used in the following matrix are:

Trend

+++	Highly favorable	-	Highly unfavorable
++	Moderately favorable	--	Moderately unfavorable
+	Slightly favorable	---	Highly unfavorable
0	Largely unchanged		

Table VI - 6. Environmental Effects Matrix.

Other Variables:	Present Situation Actual	Alt. A	Alt. B	Alt. C	Alt. D	Alt. E
Air Quality	Reference Base	+	+	0	0	0
Risk of Fire Ignition	Ref. Base	0	0	-	-	-
Accessibility for Fire Suppression	Ref. Base	-	--	+	+	++
Future Options						
- Long-term	Ref. Base	0	0	-	--	---
- Short-term	Ref. Base	-	---	+	++	++
Historic and Archeologic	Ref. Base	0	0	0	0	0
Mineral Access	Ref. Base	0	0	+	+	++
Noise	Ref. Base	0	0	-	--	---
Recreation Quality (Road-Related)	Ref. Base	+	+	0	0	-
Recreation Quality (Trail-Related	Ref. Base	0	0	--	--	---
Recreation Quality (Kalmiopsis Wilderness and Wilderness Recommendation Area)	Ref. Base	0	++	++	0	0
Water Quality	Ref. Base	+	+	0	0	-
Stream Flows:						
-Minimums	Ref. Base	-	-	0	0	+
-Maximums	Ref. Base	+	+	0	0	-

(cont'd)

Other Variables:	Present Situation Actual	Alt. A	Alt. B	Alt. C	Alt. D	Alt. E
Maintenance of Established Landscape Character	Ref. Base	0	0	-	--	---
Preservatrion of Substantially Unaltered Environment	Ref. Base	0	0	-	--	---
Protection of Habitat for Rare, Threatened or Endangered Flora & Fauna	Ref. Base	+	+	-	--	---

VII. IDENTIFICATION OF THE PREFERRED ALTERNATIVE

After careful analysis and evaluation of the public input, existing resources, land capabilities, environmental effects and social and economic values the Forest Service selected Alternative D as the Preferred Alternative. It was selected from a wide range of alternatives (5) described on the previous pages.

Basically, this alternative meets the evaluation criteria described in Section III. These goals and constraints provide the necessary tool for evaluating and for developing the Preferred Alternative rationale. It would minimize the opportunity costs (job losses, commodity outputs, various soio-economic effects) while maximizing the total net public benefits. The Preferred Alternative provides a diversity of opportunities and outputs for most all user groups.

Subsequent to the public review of this Draft Environmental Statement, suggestions and comments will be evaluated for possible change or modification of the Preferred Alternative.

The rationale discussion is as follows:

The Alternative's C and D are generally supportive of each of the ten Statewide Planning Goals which are relevant to this Planning Unit. These goals, developed by the State of Oregon Land Conservation and Development Commission are: Citizen Involvement; Land Use Planning; Forest Lands; Open Spaces, Scenic, and Historic Areas and Natural Resources; Air, Water and Land Resources Quality; Areas subject to Natural Disasters and Hazards; Recreational Needs; Economy of the State; Transportation; and Energy Conservation.

Alternative's A and B are generally supportive of eight Statewide Planning Goals, generally non-supportive of one, and provides only weak or uncertain support to another. The "Economy of the State" goal is generally not supported by this alternative. Under Alternative's A and B, large reductions in both existing and potential economic activity would occur. In addition, little new economic activity or increased diversification would be produced. The "Forest Lands" goal is provided only weak or uncertain support from Alternative's A and B in that large acreages would be withdrawn from timber harvest and some other forest management.

Relevant to this Planning Unit, Alternative E is generally supportive of eight and provides only weak or uncertain support of two others. The "Open spaces, Scenic, and Historic Areas and Natural Resources" goal is given only weak or uncertain support by this "maximum-commodity" alternative. Although Wild and Scenic Rivers, the Kalmiopsis Wilderness, Research Natural Areas, and Botanical Areas would be fully protected, some influential adjacent areas would be fully developed. The "Energy Conservation" goal is weakly supported since development under this alternative would tend to require greater energy inputs per unit of output than other alternatives.

Alternative's A, C, D and E contributes toward National RPA Goal A in land and water and Goal B in recreatin, wildlife and fish, range, timber, and human and community development.

Alternative B meets the RPA Goal A for wilderness, and land and water, and Goal B for recreation, wildlife and fish, range, timber, and human and community development.

1. Management activities must protect and maintain the existing soil resource.

a. Major effects on soils assoviated with road construction and timber harvesting are concentrated in Management Area 1. All such activities will be carried out under constraints of the Siskiyou Soil Management Policy which requires maintenance of high standard of water quality. Through an on-the-ground inspection of sales by resource Forest specialists such as the Soil Scientist, protection of the soil is assured.

b. Implementation of Executive Order 11988 and Executive Order 11990 are further protections of the soil resources with management centered on the floodplains and wetlands.

c. Alternative D will continue the present practice of using sophisticated logging systems to protect existing soil resources by reducing vegetative and soil disturbances.

2. Management activities must protect and, where practical, improve water quality for the fisheries resource and for other uses.

a. Relative to the present, total sediment production in the Unit will remain unchanged.

b. Management activities will be less concentrated than at present and will disperse effects of sediment production and water quality over a larger area. Results will be to increase sediments in the roadless areas and decrease sediments in the areas already roaded. However, management activities will be designed to minimize potential sedimentation.

c. Fisheries resources are also protected through the Siskiyou Streamside Management Policy and with the establishment of Management Area 6 (fisheries/watershed areas). This will require management techniques that will ensure that sediment loads and adverse effects on anadromous fish remain at an acceptable level.

d. Through the required use of aerial systems on areas with sensitive soils, ground disturbance will be reduced. Ridge top roads will reduce critical soil disturbances along end-hauling of waste materials. By the reduction of ground disturbance, water quality should be maintained and possible effects on anadromous fish are minimized.

3. Land management allocations and management activities, in combination must maintain relatively high levels of timber outputs and mineral availability.

a. Alternative D maintains 95% of the current harvest level. Most of the timber management activities will occur in Management Area 1.

b. Potential increases are possible under intensive management practices.

c. All mineral activities are operated under existing laws and regulations. In the event of formal allocation the lands within the Proposed Research Natural Areas will be withdrawn from mineral entry. All mineral activities will be conducted in a manner that is in harmony with the management strategy of the Management Area in which it occurs.

d. Alternative D essentially maintains the existing economic situation.

4. Management activities must protect visual and other amenity qualities of the Unit as a whole from substantial long-term degradation.

a. Visual and amenity qualities along the Illinois River are protected by the study recommendation to include the river in the National Wild and Scenic River System.

b. There is little change from the present trend, where National, Regional and Forest constraints protect the land from long-term degradation.

5. Land management allocations and management activities must protect and, where practical, increase the recreation potential for all types of outdoor recreation.

a. Potential opportunities for developed site recreation and for road-related forms of dispersed recreation will be maintained or slightly increased above existing levels.

6. Management activities must protect and will, where practical, enhance fish and wildlife habitat.

a. Anadromous fisheries will decline marginally over a long period of time to reach an estimated level no less than 95% of that at present.

b. Habitat and population of black-tailed deer, elk and most other game species will improve under Alternative D.

c. Snag Management Policies along with the Siskiyou Streamside and Soil Management Policies will continue to protect fish and wildlife habitat. Land management allocations (24%) Visual Management areas, and Streamside Management Zones contribute to old-growth dependent and cavity-nester habitat.

7. Management activities must protect the qualities of the Illinois River until the study recommendations to include it in the National Wild and Scenic Rivers System are examined by Congress.

a. The Illinois River will be restricted to Wild and Scenic River management constraints.

8. Management activities must, to the extent practical, adquately protect endangered, threatened, and rare floral and faunal species within the Unit.

a. Alternative D will adequately protect known species of threatened or endangered and rare floral and faunal species throughout the Unit.

9. Management activities must identify, evaluate, and where appropriate, protect, historical and archeological sites within the Unit.

a. Alternative D should not have any significant effects on historical or archeological sites. The project planning process for any ground-disturbing activities will include an on-the-ground inventory of cultural resource sites, districts, object, and structures, as required by Executive Order 593. 11593. Compliance with 36CFR800 procedures will be documented in the project Environmental assessment. The State Historic Preservation Officer has been

consulted regarding the possibility of any historical or archeological features in the Unit and the policies relating to ground-disturbing activities. Copies of this correspondence can be found in the Appendix.

10. Management activities must keep fire hazard at an acceptable level, commensurate with the risk.

a. Relative to the present Alternative D will, essentially, result in the same fuel loading.

b. Improved road access will tend to increase the risk of man-caused fire ignition, but will also tend to increase the effectiveness of suppression activities.

c. Slash disposal activities will be undertaken after full consideration of soil, watershed, silvicultureal and fire management requirements.

11. Existing classified areas in the Unit will remain unchanged. Other areas may be administratively classified as needed.

a. The Kalmiopsis Wilderness, Wheeler Creek Natural Area, Babyfoot Unusual Interest Area will remain as classified.

b. The Proposed Hoover Gulch Research Natural Area is in the process of being established as an example of a mixed evergreen forest (Douglas-fir - evergreen hardwoods.

VIII. CONSULTATION WITH OTHERS

Input from sources outside of the Forest Service has been obtained throughout the planning process for this Chetco-Grayback Planning Unit.

The Roadless Area Review and Evaluation (RARE I) process was one early opportunity for public input. On March 13 and March 25, 1972, public meetings were held in Grants Pass and Medford, Oregon, respectively, to receive public comment on roadless areas of 5,000 acres or more in the Forest. Of the 3,626 persons providing inputs during this time period, 36% were in favor of further study of the roadless areas for possible Wilderness classification while 64% were opposed to such action. Additional comments were received on the areas in this Unit in response to the Chief's Draft Environmental Statement on Roadless and Undeveloped Areas.

Since that time a number of roadless areas have been found, primarily through the land management planning process, that were ommitted from the first inventory. Opportunities for the public to nominate areas on the local Forest or any forest in the nation occurred at meetings August 1, 1977 at Gold Beach, Oregon and August 6, 1977 at Ashland, Oregon. The objective of this exercise was to update the inventory and identify all areas that could be considered for inclusion in the National Wilderness Preservation System.

An information brochure was made available to interested persons during the spring of 1976. Later, public meetings were held on March 2 and 4, 1976. Forty-five people attended the Tuesday, March 2, meeting at Brookings, Oregon. The Cave Junction meeting the following Thursday, March 4 attracted about 120 persons. An informative slide tape show about the Planning Unit was presented during the first portion of each meeting. The participants were divided into smaller groups during the second phase of the meeting where they could discuss their concerns and preferences with the other inndividuals and the Forest Service. Nearly 150 ideas were expressed at the meetings. These covered many topics and ranged from concerns about protecting the local and regional economic base to concerns about preserving additional wilderness.

The information and ideas presented at these meetings were fully considered before the land management alternatives were developed and displayed in an alternatives brochure and made available in September 1976. The newspaper like brochure contained six alternatives and a blank map for the individual to develop his or her own land management alternative, if so desired.

Approximately 3,000 brochures were distributed to persons interested in this Planning Unit. Nearly a 1,000 people expressed their opinions and concerns about the alternatives. The following is a tabulation of the respondents by interest groups.

Table VIII-1. Respondents by Interest Groups. 1/

Interest Groups	Percent	Totals
Preservation-Oriented	12.3	118
Compromise-Oriented & Other	5.1	49
Development-Oriented	82.6	792
TOTALS	100.0	959

1/ Interest Groups:
a) Preservation-Oriented - A respondent who prefers Alternative A.
b) Development-Oriented - A respondent who prefers Alternative F.
c) Compromise-Oriented & Others - A respondent who prefers one or more of Alternatives B, C, D. A respondent expressing an opinion or respondent offering his/her own alternative.

The responses were analyzed and five alternatives, were selected for the Draft Environmental Statement. These alternatives represent a broad range of possibilities for land management allocation.

Initial distribution of this DES will be made to a number of individuals and to the agencies, organizations and individuals as shown below. Copies will also be made available for public review at many libraries and at Siskiyou National Forest, Supervisor and Ranger District offices. In addition, everyone for this Planning Unit who is not also on the initial distribution list will be sent a notice that the DES is available.

Federal

Bonneville Power Administration
Department of Agriculture
Department of Commerce
Department of Defense
Department of Health, Education, and Welfare
Department of the Interior
Department of Labor
Environmental Protection Agency, Region 10
Federal Energy Administration
Federal Highway Administration
Federal Highway Commission
National Aeronautics and Space Administration
Pacific Northwest River Basins Commission
Regional Federal Highway Administration
Water Resources Council

State

Local Government Relations Division, Executive Department

Public Officials

County Commissioners, Coos, Curry, Douglas, and Josephine Counties
Governor, State of Oregon (through State Clearinghouse)
Subcommittee on Public Lands, House Committee on Interior and Insular Affairs
U.S. Congressman, 4th District
U.S. Senators from Oregon

Organizations

American Institute of Biological Sciences
Brookings-Harbor Chamber of Commerce
Cascade Holestic Economic Consultants
Coos, Curry, Douglas Economic Improvement Association
College of Forest Resource, University of Washington
Corvallis Center for Environmental Service, Oregon State University
Denver Public Library
Department of Fisheries and Wildlife, Oregon State University
E.S. Jackson Library, Central Oregon Community College
Federation of Western Outdoor Clubs
Forest Resources Library, University of Washington
Friends of the Earth
Gold Beach Chamber of Commerce
Grants Pass Chamber of Commerce
Industrial Forestry Association
Izack Walton League
Library, Colorado State University

Mazamas
National Wildlife Federation
Northwest Mining Association
Northwest Timber Association
Oregon Council of Rock and Mineral Clubs
Oregon Environmental Council
Oregon Equestrian Trails Association
Oregon Student Public Interest Research Group
Oregon Wildlife Federation
Pacific Northwest 4-Wheel Drive Association
Penrose Memorial Library, Whitman College
School of Forestry, Oregon State University
Sierra Club
Sierra Club Legal Defense Fund
Southern Oregon Timber Industry Association
Survival Center, University of Oregon
Trails Club of Oregon
Trout Unlimited
Washington State Sportmen's Council
Washington State Horsemen, Inc.
Western Forestry and Conservation Associaton
Western Forest Industry Association
Western Wood Products Association
The Wilderness Society
Wildlife Management Institute
The Wildlife Society

Copies of this Draft Environmental Statement will be available for review at many public libraries in southwestern Oregon and at the Forest Service offices listed below:

Office of the Chief
USDA, Forest Service
South Agriculture Bldg, Room 3230
12th Street and Indenpendence Ave., S.W.
Washington, D.C. 20250

Regional Office, Forest Service
319 S.W. Pine Street
Portland, Oregon 97208

Supervisor's Office
Siskiyou National Forest
1504 N.W. 6th Street
Grants Pass, Oregon 97526

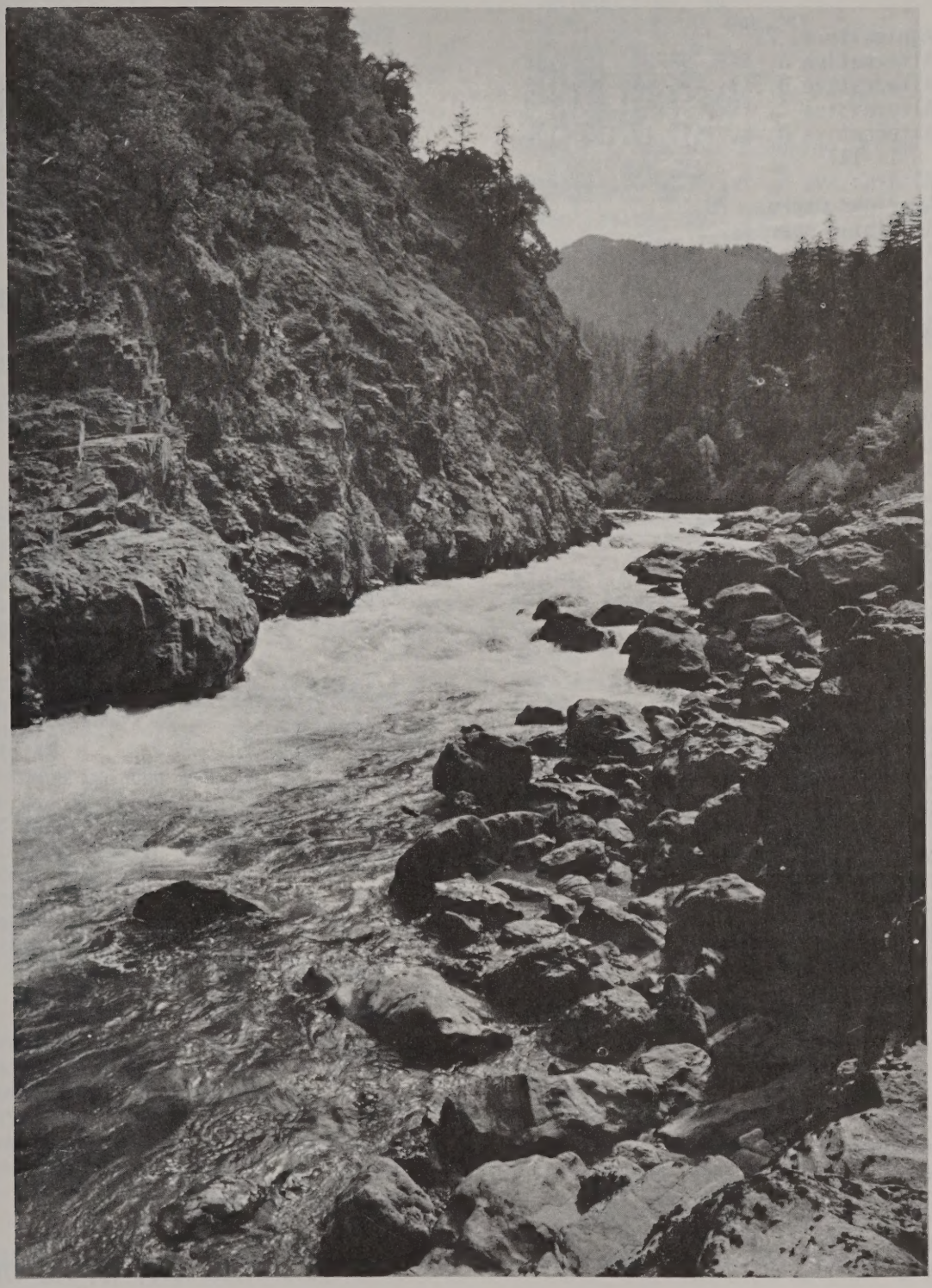
Chetco Ranger District
446 Oak Street
Brookings, Oregon 97415

Gold Beach Ranger District
1225 South Ellensburg
Gold Beach, Oregon 97444

Powers Ranger District
Powers, Oregon 97466

Galice Ranger District
Post Office Bldg
Grants Pass, Oregon 97526

Illinois Valley Ranger District
Highway 199
Cave Junction, Oregon 97523



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1/ Policy and standards as of June 1, 1976. However, policy and standards evolve over time as new information and concerns emerge. At any given time, the most current policies and standards will be applicable.

APPENDIX A

1. Proposed DEQ Water Quality Standards

Oregon Department of Environmental Quality (DEQ) water quality standards for the Rogue River Basin adopted pursuant to ORS 468.735 are applicable to those lands in this Planning Unit within the Rogue Basin. A portion of those standards follow: 1/

"No wastes shall be discharged and no activities shall be conducted which either alone or in combination with other wastes or activities will cause violation of the following standards in the waters of the Rogue River Basin:

"A. Dissolved Oxygen (DO):

1) Fresh Waters: DO concentrations shall not be less than 90 percent of saturation at the seasonal low, or less than 95 percent of saturation in spawning areas during spawning, incubation, hatching, and fry stages of salmonid fishes."

"B. Temperature:

1) Fresh Waters: No measurable increases shall be allowed when stream temperatures are 58¼ F. or greater; or more than 0.5¼ F. increase due to a single-source discharge when receiving water temperatures are 57.5¼ F. or less or more than 2¼ F. increase due to all sources combined when stream temperatures are 56¼ F. or less, except for specifically limited duration activities which may be specifically authorized by DEQ under such conditions as it may prescribe and which are necessary to accommodate legitimate uses or activities where temperatures in excess of this standard are unavoidable."

"C. Turbidity (Jackson Turbidity Units, JTU):
No measurable increases in natural stream turbidities shall be allowed when natural turbidities are less than 30 JTU, and no more than a 10 percent cumulative increase in natural stream turbidities shall be allowed when stream turbidities are more than 30 JTU, except for certain specifically limited duration activities which may be specifically authorized by DEQ under such conditions as it may prescribe and which are necessary to accommodate essential dredging, construction, or other legitimate uses or activities where turbidities in excess of this standard are unavoidable."

"D. pH (Hydrogen Ion Concentration): pH values shall not fall outside the range of 6.5 to 8.5."

1/ Excerpts from the "Proposed Water Quality Management Plan for Rogue River Basin" issued by the Oregon Department of Environmental Quality in February, 1976.

2. Siskiyou Watershed Data

The Illinois River has been gaged at Kerby (1926-1978), Selma (1956-1967), and Agness (1960-1978) by the U.S. Geologic Survey. Maximum, minimum, and mean monthly flows have been averaged for these three stations during their periods of record (Tables X - A-1, X - A-2, and X - A-3). Table X - A-4 provides water yield data for the watershed. Many of the larger streams were measured for low flows during the drought of 1977.

Table X - A-1. Summary of Illinois River Watershed Data Gathered Near Kerby (March, 1926 to September, 1976.) 1/

Month	Mean Discharge (cubic feet per second-cfs) Maximum	Minimum	Mean
January	7,375	293	3,007
February	7,833	779	2,658
March	5,499	655	2,176
April	3,770	361	1,570
May	2,439	199	974
June	1,270	82	393
July	296	35	102
August	127	16	48
September	105	17	43
October	3,363	29	285
November	6,344	40	1,291
December	9,242	183	2,461
Mean Annual	2,372	576	1,253

1/ Summary of U.S. Geological Survey Water Resource Data for Oregon.

Table X - A-2. Summary of Illinois River Watershed Data Gathered Near Selma (October, 1956 to February, 1968) 1/

Month	Mean Discharge (cubic feet per second-cfs) Maximum	Minimum	Mean
January	9,953	1,115	5,168
February	15,010	2,516	4,523
March	7,566	1,340	4,272
April	6,776	1,448	3,145
May	4,517	764	1,820
June	915	328	562
July	267	138	188
August	130	65	106
September	124	74	98
October	2,732	86	556
November	4,490	161	2,028
December	16,430	432	4,129
Mean Annual	3,735	1,709	2,335

1/ Summary of U.S. Geological Survey Water Resource Data for Oregon.

Table X - A-3. Summary of Illinois River Watershed Data Gathered Near Agness (October, 1960 to September 1976). 1/

Month	Mean Discharge (cubic feet per second-cfs) Maximum	Minimum	Mean
January	25,660	2,047	11,599
February	15,420	4,479	8,341
March	14,550	2,187	8,295
April	11,750	1,653	4,899
May	8,195	1,116	2,851
June	1,690	510	947
July	574	254	383
August	384	155	242
September	403	149	219
October	4,696	167	838
November	23,060	665	5,489
December	26,830	3,218	9,600
Mean Annual	7,799	2,792	4,464

1/ Summary of U.S. Geological Survey Water Resource Data for Oregon.

Table X - A-4. Streamflow Records In or Adjacent to the Chetco-Grayback Planning Unit. 1/

Location	Water Years	Adjusted Area (Sq.Mi.)	Mean Flow (Area Inch)	(cfs)	Thousand (Acre-Ft.)	Extreme Flows Peak (cfs)	Low
Sucker Creek	1941-76	83.9	39.11	241	175	19,300 2/	12
Althouse Creek	1947-53	24.3	39.94	71.5	51.8	2,680	3.2
E. Fork Illinois	1928-76	42.3	56.48	176	127	15,700 2/	4.6
W. Fork Illinois	1944-76	42.4	70.61	221	162	16,100 2/	1.5
Illinois River near Kerby	1927-76	380	46.02	1287	1000	92,200 2/	18
Illinois River near Selma	1957-67	665	47.65	3335	1690	160,000 2/	61
Chetco River	1970-76	271	121.97	2434	1763	85,400 2/	45
Grayback Creek	1947-51	24.1	34.13	60.6	43.9	2,080	5.0

1/ Collected by the U.S. Geological Survey.
2/ Estimated 1964 Flood from River Stage.

APPENDIX B

TITLE 8200 - LAND USE PLANNING

8200 - POLICY

Streamside Management Units. A Streamside Management Unit (SMU) is part of the water influence zone and will be managed to maintain or improve water quality for the benefit of all water uses (FSM 2542, 2603), to insure that applicable water quality standards will be met, and to comply with the intent of the National Environmental Policy Act.

As part of the multiple use plan, streams of the Siskiyou National Forest have been classified and designated on a map as SMU's. Special management practices will be prescribed on a case-by-case basis to meet goals established for each class of stream, bearing in mind that the cumulative downstream effects from a number of individual streams must also be considered when planning the overall extent and timing of management activities.

The delineation of SMU's will help in designating measures to minimize water temperature increases, reduce turbidity and channel erosion, avoid the accumulation of woody debris, and lessen other impacts on water quality resulting from land management activities.

Where esthetic or recreation values exist or are potentially important, the boundaries of Visual Management System foreground and SMU's may overlap. If management constraints are in conflict, the most restrictive will apply.

The SMU concept recognizes that all streams are important, but that some streams because of their present or foreseeable use should be provided a higher measure of protection than normal watershed management practice would dictate. This is particularly true on the Siskiyou, where in many watersheds, the annual value of sport and commercial fisheries exceeds the annual allowable cut of timber. The net annual value of the fishery resource of the Siskiyou exceeds seven million dollars annually, and in total is derived from both large and small streams. Accordingly, all streams on the Siskiyou deserve a high level of protection.

The SMU concept does not imply arbitrary abstention from all activities near streams but stresses the need for applying special care in management. As a practical matter, however, if SMU management goals are to be met, activity may have to be severely restricted along some streams where the potential for unacceptable impact is high. On the Siskiyou National Forest SMU can be managed with two options: (1) no cut buffers on Class 1 and 2 streams, or (2) partial cut of coniferous trees leaving hardwood to protect streams. Most streams can be managed with the partial cut option.

In order to remove coniferous trees from SMU and assure that streams will be protected by remaining hardwoods, three C clauses must be used. The C clauses are C2.3#, C6.32, and C6.51. C clause C2.3# allows the use of C6.32, a reserve tree clause, in which values are placed on leave trees. After the value is placed on reserve trees, C6.51 calls for directional falling to protect the reserve trees.

Insuring a desirable level of protection for streams involves more than just the application of the SMU concept, since it is merely one part of properly coordinated land management. For example, ephemeral streams are not delineated in the SMU concept but satisfactory land management practices must still be applied along these streams as well as throughout the watershed.

Definitions

1. Streamside Management Unit

   The stream and an adjacent area of varying width where practices that might affect water quality, fish, and other aquatic resources are modified, as necessary, to meet SMU goals for each class of stream.

   The width of this area will vary with the management goals for each class of stream, characteristics of the stream and surrounding terrain, and type and extent of the planned activity.

2. Stream. A watercourse or section of a watercourse--

   That has perennial flow, or

   That has intermittent flow.

3. Perennial Streams

   Normally flow yearlong, except during periods of extreme drought.

   Have well-defined channels and show signs of washing and scouring.

4. Intermittent Streams

   Carry water most of the year, but cease to flow during the dry season because evaporation and percolation into their bed and banks exceeds the available streamflow.

   Have well-defined channels. Channels showing active scouring or washing are included in this category even though they may flow only during or immediately after periods of precipitation or the melting of snow.

Normally lack litter, except during the fall of the year, indicating streamflow sufficient to move material during runoff.

Intermittent streams do not include ephemeral streams.

5. Ephemeral Streams

Carry only surface runoff and hence flow only during and immediately after periods of precipitation or the melting of snow.

Form in slight depressions in the natural contour of the ground surface but do not normally develop sufficient flow to wash or scour their channels.

Can usually be identified by the presence of needles or other litter in the depressions.

Recommended Practices. The best land management practices for the individual situation shall be used on all streams on a case by case basis. Examples of desirable practices that will be specified to achieve management goals follow. Additional references are: FSM 2203, 2453.65, 2482.2, 2522.11, and FSH 7709.11, Guides D-4 and D-5, the Environmental Protection Agency "Industrial Waste Guide on Logging Practices" and Oregon State Game Commission "Guidelines for Stream Protection in Logging Operations."

Class I. The following practices apply:

Timber shall not be felled across the stream, and trees shall be lined, if necessary, to fall away (C6.51). Logs shall not be skidded across the stream and if necessary to cross should be flown clear of the streamside area. SMU's of one to three chains in width will be left on each side of streams. Leave high stumps adjacent to SMU's to prevent movement of woody debris into leave strips and streams. Vegetation which protects streambanks from erosion shall not be disturbed. The amount of shading vegetation required on perennial streams can be estimated using temperature prediction methods. Skyline yarding systems with lateral yarding capability, or helicopters, will be required for timber harvest in SMU's. Logging equipment shall be kept out of streams.

Roads shall be located, constructed, and maintained so that sediment and woody debris will not enter or be deposited in the stream. Utilize bridges or open bottom culverts at stream crossings. Keep equipment out of stream channels except for installation of crossing structures. To insure that effects are minor, no construction activities (bridges, culverts, etc.) will be allowed in the stream between December 1 and March 31, and special installations (e.g., sediment traps, settling ponds, coffer dams, riprap, etc.) should be utilized to keep sediment from reaching streams.

Man-caused woody debris must not be allowed to enter the stream channel. Removal of existing stable, natural woody debris shall be done only in cases where fish migration is blocked, water quality impaired, excessive erosion is occuring as a result of the debris, or access for recreation purposes is hampered (consult with Forest Fishery Biologist and Watershed Staff). Existing natural woody debris will not be removed in wilderness.

Livestock grazing will be managed under special management prescriptions which fully meet Class I objectives. Allowable use by livestock of streamside vegetation will be limited to the amount that can be utilized while maintaining bank stabilization, water quality, shade, and cover for fish.

Class II. The following practices apply:

Timber shall not be felled across the stream and trees shall be lined, if necessary, to fall away (C6.51). All logs yarded across the stream shall be flown clear of the stream or cross on temporary bridges. SMU's of one to three chains in width will be left on each side of streams. Leave high stumps adjacent to SMU's to prevent movement of woody debris into leave strips and streams. Vegetation which protects streambanks shall be retained. The amount of shading vegetation required on perennial streams can be estimated by using temperature prediction methods. Skyline systems with lateral yarding capability, or helicopters, will be required for timber harvest in SMU's. Logging equipment shall be kept out of streams.

Roads shall be located, constructed, and maintained so that sediment and woody debris will not enter the stream. Crossing structures may be permanent or temporary. Use of equipment in streams shall be allowed only for installation of crossing structures.

A small amount of man-caused woody debris may reach the stream despite the above precautions. It should be removed by hand or by some means that will not disturb the stream channel and streamside vegetation. Removal of existing stable, natural woody debris shall be done only in cases where fish migration is blocked, water quality is being impaired, erosion is occurring or will occur as a result of the debris, or access for recreation purposes is hampered (consult Forest Fishery Biologist and Watershed Staff). Existing natural woody debris will not be removed in wilderness.

Livestock use will be managed under noncontinuous grazing systems (FSM 2222.1) with prescriptions which fully meet Class II objectives. Short term effects of grazing on water quality and fish cover may occur on portions of the stream during a grazing season so long as State and Federal water quality standards are not

violated and fish populations are not adversely affected. Any short-term effects should be compensated for during the following grazing season in the grazing system selected.

Class III.

Management practices in this class will be concerned primarily with preventing soil movement, including slumps, earth slides, etc., maintaining satisfactory downstream water temperatures, and keeping debris from moving downstream into higher class streams. Since these are generally perennial streams, care must be taken at all seasons to protect downstream values. The following practices apply:

Timber shall not be felled or skidded across the stream except in rare circumstances. SMU's of one to three chains in width will be left on each side of streams. Vegetation which protects streambanks shall be retained. The amount of shading vegetation required on perennial streams can be estimated by using temperature prediction methods. Skyline systems with lateral yarding capability, or helicopters, will be required for timber harvest in SMU's. Equipment shall not operate in the channel proper.

Roads shall be located, constructed, and maintained so that the streambank and channel are left undisturbed.

Man-caused woody debris that gets into the stream channel shall be removed by hand and/or cable yarding equipment.

Livestock shall be managed in accordance with Class III objectives. Specific criteria covering soil disturbance, shade removal, esthetics, and other values shall be developed for each allotment.

Class IV.

Management practices in this class will be concerned primarily with preventing soil movement, including slumps, earth slides, etc., and debris from moving downstream into higher class streams. Downstream effects are nil during the dry period, but care must be taken to prevent later movement during periods of high precipitation and runoff. The following practices apply:

Felling, skidding, and road construction across streams shall be avoided. When it cannot be reasonably avoided, it shall be conducted at the time of minimum flow and at locations where streambank and channel disturbances are minimized. In some cases buffer strips may be required on Class IV streams to protect the quality of downstream waters.

Roads shall be located, constructed, and maintained so that the stream channel is left essentially undisturbed.

Man-caused woody debris that gets into the stream channel shall be carefully removed by hand and/or cable yarding equipment.

Grazing will be conducted under principles of livestock management which will protect soil, vegetation, and water quality.

Management Application. The major challenge in proper application of the SMU concept will be on-the-site evaluation of the sensitivity of the specific area in terms of possible damage to water quality and the aquatic resources. This sensitivity will determine the kinds and limits of activity that will meet management goals established for each class of stream. Local guidelines and procedures need to be developed to provide a means of evaluating management alternatives. After acceptable alternatives are identified, the final job will be their proper application.

TITLE 2100 - MULTIPLE USE MANAGEMENT

Stream Class. The present and foreseeable uses made of the water, and the potential effects of on-site changes on downstream uses, are the criteria for defining four stream classes. The importance of use will be relative to the general area. Consequently, size is not necessarily a criterion for classification. Whole streams or parts of streams can be classified. One stream may be sectionalized into several classes.

Class I. Perennial or intermittent streams or segments thereof that have one or more of the following characteristics:

Direct source of water for domestic use (cities, recreation sites, etc.).

Used by large numbers of fish for spawning, rearing or migration.

Flow enough water to have a major influence on water quality of a Class I stream.-*

Class II: Perennial or intermittent streams or segments thereof that have one or both of the following characteristics:

Used by moderate though significant numbers of fish for spawning, rearing or migration.

Flow enough water to have only a moderate and not clearly identifiable influence on downstream quality of a Class I stream, or have a major influence on a Class II stream.

Class III: All other perennial streams or segments thereof not meeting higher class criteria.

Class IV: All other intermittent streams or segments thereof not meeting higher class criteria.

APPENDIX C

TITLE 8200 - LAND USE PLANNING

8200 - POLICY

Soil Management Direction. Land management objectives, with special emphasis placed on the protection of soil values on the Siskiyou National Forest are as follows.

> To manage the forest land outside of developed recreation sites and dedicated areas with timber as the key use and sustained high level production of quality timber as the primary goal. However, optimum consideration of all other resource values will be recognized consistent with the primary goal.
>
> To manage all other resources under a Multiple Use Plan consistent with the preceding objectives.

Management Situation. The Principal Forest Resource Zone is characterized by intense competition for all occupancy-type of uses, particularly in the valley bottoms. Typical occupancy uses include highways, administrative sites, service and recreation areas, rights-of-way for power lines, pipe lines, power and irrigation projects, and water storage projects. Demands for timber are also extremely heavy. Big game uses the same areas as both summer and winter range.

The Principal Forest Resource Zone contains some of the highest quality and heaviest yielding timber stands in the United States, constituting a significant percentage of the commercial timber reserve of the nation. The National Forest timber in this zone is extremely important to the timber industry of Oregon.

The major habitat for native and anadromous fish is located in the Principal Forest Resource Zone. It is also an important habitat for small game and upland birds, and for migratory waterfowl. It supports more man-days of hunting and fishing use than any other zone.

The Principal Forest Resource Zone poses many difficult multiple use decisions because many of the resource uses attain their highest economic value here, and competition is correspondingly intense.

Management Direction Applying to all Zones and Units - Soil and Water Values.

The following three paragraphs are overriding in all resource management activities. They are derived from the Multiple Use-Sustained Yield Act which directs the management of National Forests without impairment of the productivity of the

land. Application of all objectives for the individual Resource Management Zones, Landscape Management Units, and management units must conform with these considerations.

Soil is a basic element in National Forest management. Management of all resources will be planned to keep soil in place; to maintain and/or improve its ability to absorb and store rainfall; and to produce plant growth. Practices that improve present soil conditions will be given preference.

Land and resource uses necessary to support an economic activity often cause soil dislocation and have adverse effects on watershed values. Such dislocations will be held to a minimum with preventive or corrective measures being specified and applied. Soil rehabilitation measures will be taken promptly where needed. In potential soil problem areas, the effect of projected uses will be evaluated by soil technicians. This information will be used by the line officers in applied management.

Water is also a basic resource because of its inseparable relationship to soil values and the productivity of land. It will be given primary consideration by managers to provide optimum yield of usable water in stable streamflow or subsurface supply. This will be done by maintaining the hydrologic balance between soil, water, and plants to obtain the best possible performance of the watershed. The quality of water will be restored, maintained, or improved by reducing sediment content through preserving stability of soil on watershed slopes and along stream channels. The purity, temperature, color, and taste of water will be maintained or improved to the extent that these qualities can be controlled on the land. Water yields and seasonal distribution of flow will be maintained or improved to the extent practicable.

The soils overlays of the District Multiple Use maps stratify each District into four soil management groups. These groups are combinations of the various classifications defined in the Siskiyou National Forest Cutbank Stability Reconnaissance Surveys. These surveys are broad and somewhat general by nature, and should not be used as a final answer. Specific areas should be examined on the ground for correlation with the survey and final decisions based on facts. Restrictions in management for a given soils group will also apply to all other soils groups that are more critical. Management directions for the various broad Soil Management Groups follow. Advance approval of the Forest Supervisor will be required for anything other than a minor deviation from these directions.

Soil Management Group	Mapping Color	Management Direction
I A-C II A-C III A-C	Green	1. Manage in accord with Regional and Forest coordinating requirements. 2. No tractor slash piling during wet weather (Oct. 31 to May 1). Soil moisture and density criteria to be used in determining when tractor piling will be shut down.
II D III D	Yellow	1. Road construction on slopes over 65 percent will require end haul of waste material. Compaction standards should be required in all classes where needed for stability. 2. All slides will be end hauled and disposed of in designated waste areas. 3. If recommended by the District Ranger and Soil Scientist, tractor logging will be permitted in partial cuts only on slopes up to approximately 30 percent. In the case of conflicting recommendations, the Forest Supervisor will make the decision. 4. Skyline logging will be required on II and III D.
II E IV B&C IV D&E	Orange	1. Road construction on slopes over 65 percent will require end haul of waste material out of the soil group to a more stable area. 2. Intensive erosion control measures will be required in all classes. 3. In Class IV grade will be rolled and alignment modified to reduce cuts and fills.

Soil Management Group	Mapping Color	Management Direction
		4. No tractor logging will be permitted. High lead logging may be permitted on small portions of a unit only if it is obvious that the logs are being yarded into a less critical soil management group.
		5. A logging system such as skyline, slackline, or modification thereof, designed to keep the leading end of the yarded log continuously off the ground, or fly the entire log free of the ground, will be required. Where practicable, equipment roads will be appraised for machine assistance in installation of anchor points.
V B&C V D&E	Red	1. Generally no road construction will be permitted except that short stretches may be constructed with Forest Supervisor approval.
		2. As a fundamental principle, surface logging contact in harvest cuts will not be planned. This excludes conventional high lead and tractor logging. Skyline, slackline, or modified high lead "flyer" logging systems (or modifications thereof) designed to fly the yarded logs free of the ground will be planned where it is possible to land the logs in a less critical soil group. Where roads pass through red soil groups, mortality salvage, intermediate and overwood removal cuts will be planned, utilizing cable systems operating from the existing road surface that will, if possible, fly the yarded log to protect soil and silvicultural values. Where limitations of topography prevent flying the yarded

Soil Management Group	Mapping Color	Management Direction
		log, the logging system employed will be required to continuously keep the leading end of the yarded log free of the ground.
		3. The soil sensitivity for all proposed roads and logging planned within this soil management group will be evaluated by the Forest Soil Scientist and his recommendations made available to the District Ranger and Forest Staff. In the event there is disagreement between any of the above on the most appropriate course of action, the Forest Supervisor will make the decision.

Management Directions that apply to all Soil Management Groups are as follows:

1. No tractor logging will be permitted in clear cut units without the specific recommendations of the District Ranger and the Soil Scientist. In the case of conflicting recommendations, the Forest Supervisor will make the decision.

2. Tractor logging will be shut down during wet periods as determined by soil moisture and density factors from proctor curves. This includes rubber-tired skidders as well as tractors.

3. Landings, especially where excavation is required, will be held to the minimum practicable size.

4. Excavated material on slopes over 65 percent which results from landing construction will be end hauled to designated waste areas.

5. Wet weather road construction will not be permitted when the soil moisture condition exceeds that which results in compaction to 90 percent of the maximum density for that particular soil. This will be determined from proctor curves.

6. Road grades will be rolled and alignment sacrificed to avoid, insofar as practicable, all unstable soil areas.

7. Log culverts will not be used. Where drainage facilities are needed in other than permanent roads, temporary log bridges or metal culverts will be installed and left in place after use.

APPENDIX D

SISKIYOU NATIONAL FOREST DEAD TREE (SNAG) GUIDELINES

Situation: Extensive areas of forested lands are losing a significant part of their value as wildlife habitat because dead and defective trees are being reduced or eliminated by management activities. These dead and defective trees are used by a great variety of wildlife species for nesting, denning, perching, roosting, feeding and cover. At least 41 species of birds and 7 species of mammals found on the Siskiyou National Forest are totally or heavily dependent on dead and defective trees; another 12 bird species and 8 mammal species are somewhat dependent on dead or defective trees (Table 1).

Dead Tree (Snag) Management

A. Minimum Goal

As a minimum, provide habitat to maintain self-sustaining populations of snag-dependent wildlife species on the Siskiyou National Forest.

B. Minimum Objective

On a continuing basis, on all commercial forest acres scheduled for harvest, provide dead, standing, and down trees as needed to meet the above goals. It is recognized that many areas will take additional time to produce the desired dead trees.

C. Methods of Accomplishing Objective

The minimum needs for dead trees (snags), and defective green trees (culls), vary among habitats and species. These guidelines set minimum goals for numbers and sizes of both snags and green trees which will be converted to snags either manually or naturally at a later date. These minimum goals will be used to provide at least a minimum continuous supply of dead trees suitable for wildlife.

It is not expected that an absolute number of wildlife trees will be left on each and every acre of land in the Siskiyou National Forest. However, it is expected that all dead trees (snags) will be left standing whenever possible and that these wildlife trees will be as evenly distributed as possible.

The State of Oregon safety codes require that dead trees (snags) which would be situated in close proximity to workmen and equipment during logging operations must be felled prior to logging (see Appendix B). Also, many dead trees are felled in harvest units because they may present special fire hazards when prescribed burns are conducted, or during lightning storms or wildfires. As a result of these safety

and fire considerations, most of the dead trees within the boundaries of harvest units will be eliminated. In addition, dead trees which are left standing after timber harvesting is completed will not stand through an entire rotation (100 years). Because of these realities, green cull trees and/or merchantable green trees will need to be set aside each time a unit is harvested.

Some of these green trees may have to be killed (girdled, etc.) soon after the unit is harvested. The remaining green trees may have to be killed at intervals during the rotation (if they do not die naturally); these set-aside green trees should be of different ages and sizes to insure a continual supply of dead trees for wildlife throughout the rotation. When a green tree is selected as a wildlife tree (snag), a tree that will become a snag 50 years hence will of course be smaller in diameter than will a tree that must be turned into a snag within a few years. The useful life of individual snags could be significantly extended by girdling the trees at half their height instead of at ground level. Plans (schedules) for reentry of harvest units at required intervals to girdle the selected trees may be best accomplished through the tri-system.

Implementation of these guidelines will provide habitat for 60 percent of the maximum potential population of those cavity nesters utilizing riparian and meadow zones; in the midslope zone 30 percent of the potential population will be accommodated.[1]

The pines, true firs, and Douglas-fir are the most valuable to wildlife, but many other tree species are also important, including cedars, spruces, hemlocks, oaks, maples and madrone.

1. Height and DBH of Leave Trees

   Although snags of all heights and diameters are valuable, (including "whips") as many as possible of the designated trees should be 50 feet (15 m) or over in height and at least 20 inches (51 cm) DBH.

   Investigations of the needs of cavity nesters have revealed that if the habitat requirements (for snags) of the various woodpecker species are met, then the habitat requirements of other cavity nesters (non-excavators) will be met as well. Also, the relatively large snags required by certain wildlife species (such as the pileated woodpecker) will serve the needs of those wildlife species which will use relatively small snags.

   Habitat requirements of woodpecker species inhabiting the Siskiyou are varied (Fig. 1). For roost and nest cavities, the pileated woodpecker requires a dead or defective tree with

1. From: Thomas, J. W. 1975. Snag Requirements. In Preliminary Information on Wildlife Habitat Relationships in N. E. Oregon.

a minimum height of 40 feet (12.2 m) and DBH of 20 inches (51 cm). Also, cavities abandoned by the pileated woodpecker are the only source of nesting cavities (other than naturally occurring cavities) for such large species as the wood duck and screech owl.

2. Minimum Numbers of Leave Trees

a. Dead trees (snags) should be left standing except for those which are definite safety or fire hazards.

b. Green trees to be left (conifers).

	Riparian and Meadow Zones		Midslope Zone	
	Per Acre	(Per ha)	Per Acre	(Per ha)
True Fir Type[1]	6	(15)	3	(7.5)
Douglas-fir Type[2]	4	(10)	2	(5)

1. Snag life about 30-35 years.
2. Includes all softwood forest types other than true fir; snag life about 50 years.

The intent of these guidelines for green trees is to provide, for the duration of a 100 year rotation:

(a) 2 snags (from green trees) per acre (5 per ha) in riparian and meadow zones, and (b) 1 snag (from green trees) per acre (2.5 per ha) in the midslope zone. (See definitions section (E) for explanation of terms used in this table.)

c. Hardwood trees (green or dead) are used by wildlife for a variety of purposes. These trees should be marked as leave trees whenever possible. However, hardwood leave trees are not substitutable for softwood leave trees (as listed in Section b, above).

3. Minimum Number of Down-Dead Trees

At least 2 down-dead cull logs (40 $ft.^3$ minimum volume) should be left per acre (5 per ha). The usefulness of down logs to wildlife is impaired by charring; whenever possible, down logs should be concentrated in areas which will not be control burned, such as on the perimeter of clearcuts and in leave strips.

4. Marking of Leave Trees

In situations where leave trees must be marked if they are to be retained, orange paint or an orange colored paper (durable) or vinyl sign approx. 5" x 8" (12.7 cm x 20.3 cm) will be used (see Fig. 2). In salvage sales leave trees should be permanently marked to avoid problems during future entries. To avoid possible vandalism, signs should not be readily visible from roads and trails.

5. Timber Sale Contracts

Each timber sale contract should specify that certain dead and/or live trees within the sale boundaries will be reserved from cutting. Applicable C-clauses are: C2.3 - Reserve Trees, C2.301 - Additional Wildlife Reserve Trees (needs approval of Regional Forester), and C6.32 - Protection of Reserve Trees.

D. Coordination Requirements

Effective implementation of these guidelines on each timber sale will require cooperation and coordination between the following management interests: wildlife biologist, EAR coordinator, safety, fire management, silviculture, logging systems, presale and timber sale administration.

The Forest wildlife biologist should be consulted as needed.

Timber Sale Environmental Analysis reports (EAR's) should be the focal point for coordinating the snag guidelines among those District personnel in charge of presale, silviculture, logging systems, timber sale administration and fire management. In relation to the snag guidelines, each EAR should answer two questions: (1) To what extent will the guidelines be complied with, and (2) How will the guidelines be applied (marking of leave trees, location of leave trees, etc.).

Regulations concerned with the safety of logging operations are described in the "Oregon Safety Code for Places of Employment, Chapter 16; Logging" (see especially Sections 16-1-9 through 16-1-14), and in the workman's compensation board memo by J. E. Wiles (August 20, 1974) to Supervisors and SCO's (Appendix B). Snags and other trees representing a recognized safety hazard on or adjacent to Forest roads, logging operations, recreation areas, and structural improvements will require special consideration.

Fire management rules are more restrictive in some situations than others. Some of the more hazardous situations include dead trees left standing near roads, Forest boundaries, recreation areas (especially summer homes), power lines, and on high ridges. Designated fuel breaks and fire breaks and other strategic locations

identified in pre-attack fire planning will receive special consideration.

E. Definitions

1. Dead Tree: A non-living tree with a majority of the exterior surface visibly sound or not in rotted condition. The interior of these trees may or may not be rotted, a condition which is difficult to assess readily. Those with rotted interiors are considered "soft snags", those with solid interiors "hard snags". Hard snags, over time, may become soft snags. Dead trees with less than one-half the exterior surface visibly sound are useful to cavity-dependent species; however, their usefulness is short-lived.

2. Forest Types:

   a. True Fir Type - That area of the Siskiyou on which true firs predominate. The useful standing life of a true fir snag is about 30-35 years.

   b. Douglas-fir Type - That area of the Siskiyou on which softwood trees other than true fir predominate (includes Douglas-fir, pines, cedars). The useful standing life of a snag of the "type" is about 50 years.

3. Habitat Zones:

   a. Riparian Zone - That area within 5 chains (100m) of water.

   b. Meadow Zone - That area within 5 chains (100m) of a natural opening 1 acre (.4 ha) or larger in size. The predominant vegetative cover in these natural openings is neither deciduous nor coniferous trees or shrubs. A clearcut is not considered to be a natural opening.

   c. Midslope Zone - That area not within riparian or meadow zones.

4. Self-sustaining Population: A species population of sufficient size to be capable of natural self-perpetuation.

5. Water: Perennial streams of 1 cfs or more plus all ponds, lakes and wetland/bog areas.

6. Green Tree: A live coniferous tree which may or may not contain merchantable volume. Unmerchantable green trees should be selected as leave trees whenever possible, but merchantable green trees should be selected as needed to meet the intent of the guidelines.

F. Dead Tree Distribution

It is not intended that the prescribed number of dead and/or green leave trees per acre be applied to each acre; however, neither is it the intent that dead trees and/or green trees in large concentations be averaged with large areas void of dead trees and/or green trees to meet the minimum prescribed number per acre. In many cases, more snags will increase populations of these species. Dead trees which are well distributed will receive optimum use by wildlife. Some species have relatively large territories, as the screech owl (30 acres). Therefore, if 640 snags on one section of land are concentrated on 30 acres, there will still be only 1 nesting pair of screech owls present.

Table 1

Wildlife species on the Siskiyou National Forest which depend on dead and defective trees.

Totally or heavily dependent

BIRDS

Wood Duck
**Hooded merganser
*Rough-legged hawk
*Ferruginous hawk
Red-tailed hawk
*Swainson's hawk
Golden eagle
Bald eagle
American osprey
*Peregrine falcon (duck hawk)
*Merlin (pigeon hawk)
Kestrel (sparrow hawk)
Screech owl
Spotted owl
Saw-whet owl
*Flammulated owl
Pygmy owl
Vaux's swift
Common flicker
Pileated woodpecker
Acorn woodpecker
*Lewis' woodpecker
**White-headed woodpecker
Yellow-bellied sapsucker
**Williamson's sapsucker
Hairy woodpecker
Downy woodpecker
*Black-backed 3-toed woodpecker
*Northern 3-toed woodpecker
*Ash-throated flycatcher
Tree swallow
*Purple martin
Black-capped chickadee
Mountain chickadee
Chestnut-backed chickadee
Plain titmouse
White-breasted nuthatch
Red-breasted nuthatch
*Pygmy nuthatch
Western bluebird
Mountain bluebird

MAMMALS

Pine Martin
*Fisher
Raccoon
Chickaree
Western gray squirrel
Northern flying squirrel

Partially dependent

BIRDS	MAMMALS
Common merganser	California bat
Band-tailed pigeon	Little brown bat
Barn owl	Big brown bat
Violet-green swallow	Ringtail
Brown creeper	Western harvest mouse
House wren	Deer mouse
Winter wren	Red tree mouse
Bewick's wren	Bushy-tailed woodrat
Townsend's solitaire (in stumps)	Porcupine
Starling	
*House finch	
*English sparrow	

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* = Possibly present - to be looked for.
** = Probably present, but uncommon or rare (has been sighted on the Siskiyou N.F. at least once).

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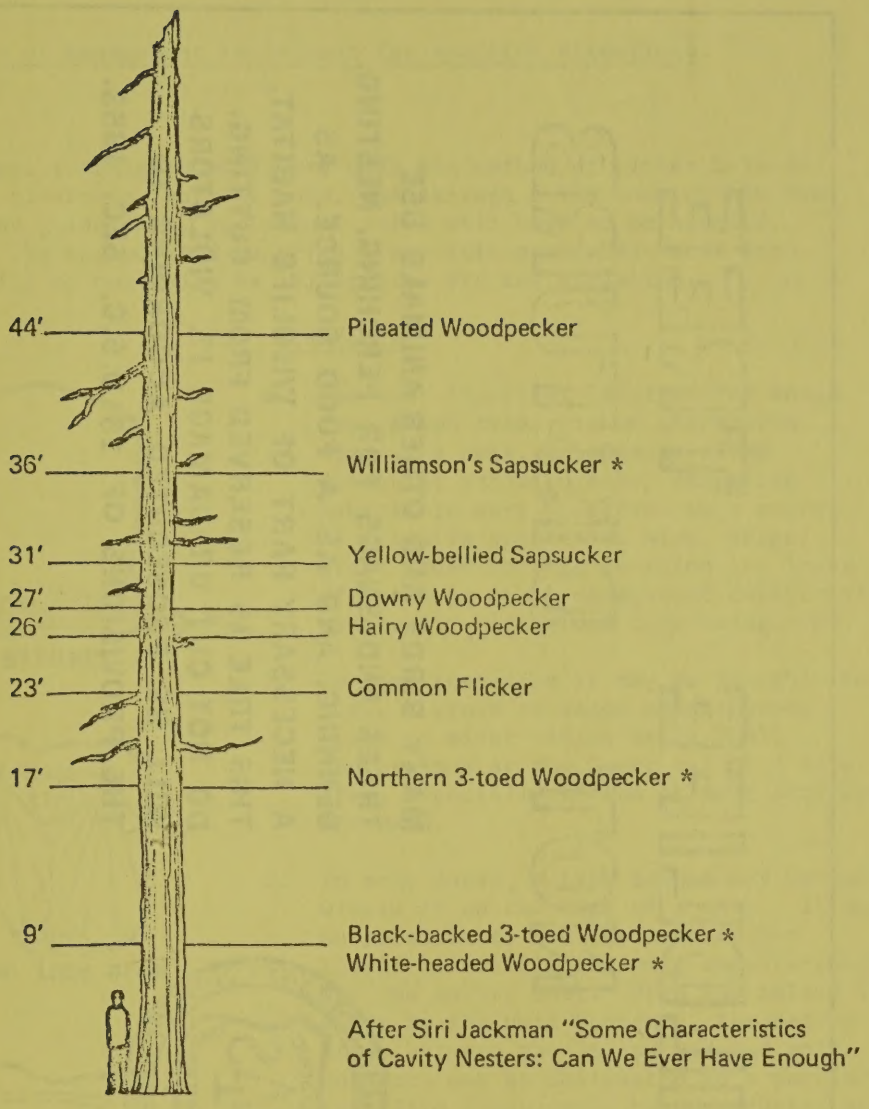


Figure 1. Average height of nest hole.

* = Uncommon on Siskiyou National Forest.

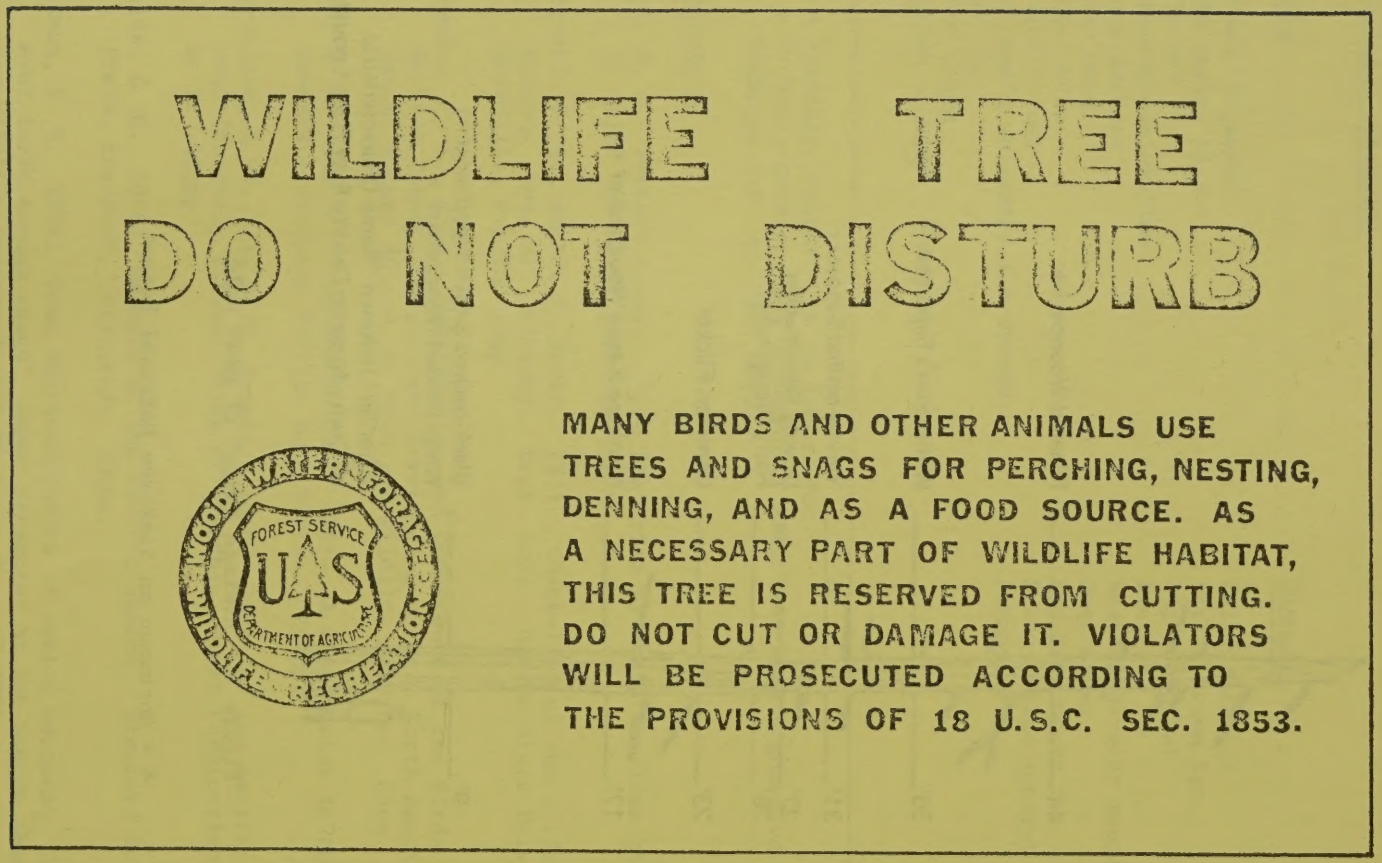


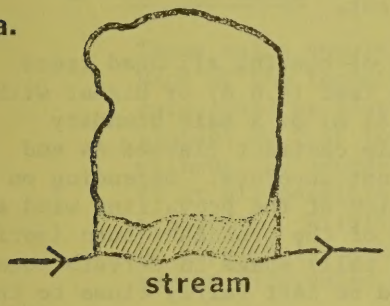
FIGURE 2. SIGN TO BE USED IN MARKING LEAVE TREES (BLACK LETTERS ON ORANGE BACKGROUND).

Examples of management techniques for specific situations.

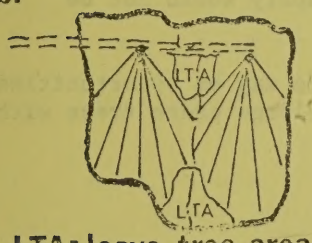
Snag management techniques will vary with the method of timber harvest. Although all clearcuts, partial cuts, and salvage sales come within the scope of these guidelines, individual sales will have to be handled separately. The method used to bring a specific management unit into compliance will of necessity be tailored to fit the situation.

1. Clearcuts

a.

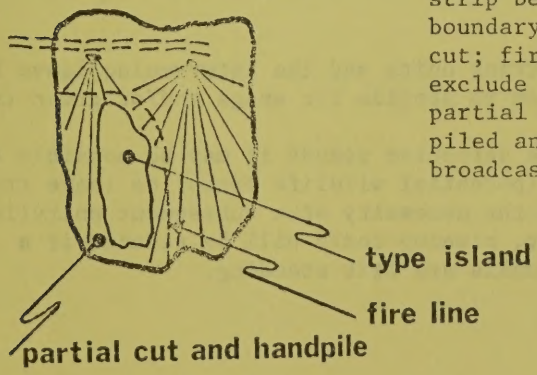


b.



LTA= leave tree area

c.

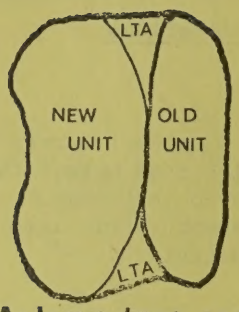


a. The most important location for snags (and green trees) is on the bottom edge of a unit, especially along perennial watercourses. (Riparian habitat is very important to a number of wildlife species). Also, snags/ green trees in this location are least affected by other management constraints, especially safety and fire management.

b. In some instances it may be possible to leave a group of snags and/or green trees on minor ridges or in small depressions at the lower end of a sale area, especially if two or more landings are used.

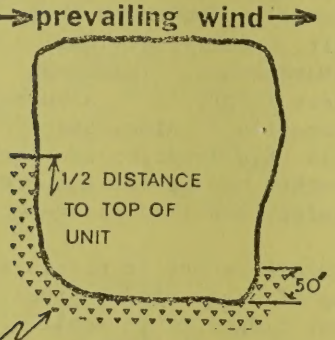
c. In some cases, a type island may be left within or on the edge of a unit. It may be possible to use the type island itself to fulfill the snag requirements for the entire unit. When the island is close to the unit boundary, the narrow strip between the island and the unit boundary may be designated as a partial-cut; fire lines could be constructed to exclude the island. Slash within the partial cut area (island) could be hand piled and burned rather than being broadcast burned.

d.



LTA= leave tree area

e.



example of an area where a 200 foot snag-free zone may not be needed

1. Clearcuts (Continued)

d. (1) In instances where a new unit adjoins an old unit, it may be possible to leave a group of snags and/or green trees on the border between the units.

(2) In other cases it may be advantageous to create leave strips between adjacent clearcuts. The leave strip could be left untouched (other than for fire and safety considerations) or developed as a partial cut.

e. The policy of cutting all dead trees (snags) 15 feet (4.6 m) or higher within 200 feet (61 m) of a sale boundary (timber sale contract clauses A4 and B2.31) is not absolute. Depending on the direction of the prevailing wind and the timing of the broadcast burn (spring instead of fall) snags in certain locations could be left fairly close to the fire line (green culls within the 200 foot - 61 m boundary would not be affected).

f. On occasion there may be opportunities to leave single large green trees within clearcuts.

2. Partial Cuts

a. It is especially important to leave snags and/or green trees in the valuable wildlife habitat along perennial watercourses. Conflicts with workman's safety are also less likely to occur here.

b. The size of the cutting units and the intervening leave blocks could be manipulated to provide for snags and/or green trees.

c. In some of the more defective stands it may be possible to select only culls (potential wildlife trees) as leave trees, which would negate the necessity of a subsequent entry(ies). As an extra benefit, cleanup costs will be reduced if a maximum number of culls are left standing.

2. Partial Cuts (Continued)

d. The perimeter of the sale area will often be an important location for green trees, and conflicts with safety regulations are less likely to occur here.

e. If green trees must be girdled to provide wildlife snags, this should not be done unitl after the second (or last) entry. Green trees girdled before the last entry might otherwise have to be felled to comply with safety regulations.

3. Salvage Sales

These sales should also meet the intent of the guidelines. Many of the techniques listed above for clearcuts and partial cuts could be adapted to salvage sales. Salvage sales could be planned so that the requirements of these guidelines are met without the necessity of designating green trees to be girdled; if at all possible, snag creation should be left to natural processes. Wildlife trees set aside in salvage sales should be physically marked (signed) as leave trees, otherwise they may be eliminated during subsequent salvage entries.

B

STATE OF OREGON
WORKMEN'S COMPENSATION BOARD
SALEM 97310

DATE: August 20, 1974 INTER OFFICE MEMO

TO: All Supervisors and SCOs

FROM: James E. Wiles, Administrator

RE New Policy on Citing Snags and Danger Trees

The following policy on the methods to handle danger trees and snags was compiled after several meetings with other governmental agencies, private employers and Accident Prevention Division personnel.

The removal of snags and danger trees shall be considered in two ways: 1) short term, and 2) long term.

Those snags to be considered under the short term program will be ONLY those snags which are within the boundaries of a sale unit, or work area.

To assist you in interpreting the short term policy, the following information is supplied:

A. Definitions

1. Danger trees and snags are defined in the danger tree hand-out sheet. In conjunction with the snag identification training program will be the SCO's opinion judgment taking into consideration employee exposure.

2. Snag: For the sake of brevity in this policy, the word "snag" shall mean danger tree and/or danger snag.

3. Near proximity shall be defined as within the distance of one-half of the height of the snag in cable logging and one-third of the distance of the height of the snag in tractor logging.

(NOTE: Larch or Tamarack, and Cedar snags shall have proximity limits equal to the length of the snag.)

B. Cable Logging: Clear cut, thinning, Western Oregon, Eastern Oregon

1. The SCO shall cite when evidence shows that a "snag" is standing in the logged over part of the unit, and if one statement from a witness verifies that any member of the rigging crew has been working in near proximity to the "snag" or if the SCO himself observes a violation.

2. When the SCO observes "snags" which are standing within the unit yet to be logged, he shall cite the employer and rate it as 0 probability.

C. Tractor, skidder, horse logging: Clear cut, thinning, Western Oregon, Eastern Oregon.

1. Same as Section B, parts 1 and 2 except near proximity may be reduced as defined.

2. Yarding skid roads shall not be nearer than thirty feet from "snags" regardless of height of "snag".

D. Log truck haul road within sale unit, landing area including guy lines.

1. "Snags" that could reach any of the areas above shall be felled before regular operations begin.

E. Cutters

1. Fallers and buckers away from the yarding operations are not subject to this policy but shall abide by the pertinent standards of the Code.

F. Environmental trees

1. Snags and/or trees designated for wildlife may be left providing they are not in conflict with this policy.

The LONG TERM POLICY is as follows:

Snags and danger trees on haul roads will be considered negotiable. By this it is meant that the supervisor, upon notification by the SCO of such danger trees in his area, will make the necessary contact with governmental agencies or private ownerships to have the hazards removed. Such danger trees can be removed by ranger sales, included in future timber sales, road re-construction or special salvage sales. TIP TO SUPERVISORS: If such an operation involves multiple ownerships, it might be advisable to use the services of the Consultative Section to co-ordinate the snag removal program.

DANGER TREES

Workmen's Compensation Board
Accident Prevention Division

NOTE: In administering the State Safety Law it was felt it would be helpful in establishing a better understanding, if the particular Safety Codes pertaining to trees to be felled prior to the placement of machines or rigging up in logging operations were reproduced.

The responsibility for contacting the timber owner to make necessary arrangements rests with the logger and should be done far enough in advance to insure a safe operation.

TREES TO BE FELLED PRIOR TO THE PLACEMENT OF MACHINES OR RIGGING UP

1. All guyline anchors for yarding or loading equipment shall be stumps or other approved anchors. Logging Code, Rule 16-5-31.

2. Anchors for all yarding or loading machine tail holds shall be stumps or other approved anchors. Logging Code, Rules 16-1-9 and 16-5-6.

3. The area to be yarded through within the guyline circle shall be clea cut, and any trees outside the circle that could be pulled over on guylines shall be felled. Logging Code, Rule 16-1-9.

4. All trees which may interfere with proper placement and tightening of guylines shall be felled. Logging Code, Rules 16-1-9, 16-5-6, and 16-5-25.

5. All trees located within reach of guyline or landing area, adjacent to cat roads, which may be pulled or pushed over, shall be felled. Logging Code, 16-1-13, 16-9-1, and 16-1-9.

6. Ample space, free of standing trees, shall be provided for proper placement and operation of machines and equipment for landing and loading of logs in the landing area. Logging Code, Rules 16-9-1 and 16-1-9.

7. All dangerous trees and snags within reach of the guylines, landing machines and landing areas that have not been covered by above interpretations shall be felled. Logging Code, Rule 16-1-9, 16-1-11, and 16-1-1.

8. Trees that are considered dangerous:

    1. Dead or rotten
    2. Likely to be blown over.
    3. That may be pulled or pushed over.
    4. That have been brushed by felled trees leaving broken limbs (widow makers).

5. That the root system has been disturbed by moving equipment, rigging, felled timber or logs.
6. All dangerous trees located on steep ground that may fall and slide into the landing or work area.

When the ground is saturated with water, trees may be blown over with very little wind. When this condition exists, they are also very easily knocked down by rigging or machines; therefore, weather conditions must be considered.

APPENDIX E

Special Areas, Flora and Fauna

The Planning Unit contains a long list of areas having features which merit some degree of special interest. These features may be geologic, botanic, historic, or scientific in nature. Table X - E-1 lists areas within the Unit boundaries which may merit some degree of special interest. Several points regarding the list are appropriate. First, the list is not necessarily all-inclusive. Second, the values of the areas appear to vary widely - from little value to substantial value. Third, many of the most valuable areas are already managed specifically to preserve or enhance their special values. Fourth, management of other resources in the area may be compatible with the protection of any significant values.

Table X - E-1. Special Areas

#	Area	Type 1/	Description
1	Store Gulch	R	Proposed Research Natural Area; also botanical interests.
2	Oregon Mtn. Area	B	Large variety of floral species.
3	Eight Dollar Mtn. Area	B	Variety of floral species.
4	Bolen Peak Area	B	Many floral species of interest.
5	Wheeler Creek	R	Research Natural Area; northern limits redwoods.
6	Lemingsworth Gulch (Packsaddle Area)	R	Serpentine vegetative and soil types, large Darlingtonia bog. Potential RNA.
7	Peavine Ridge Area	B	Mixed stands of redwood and Douglas-fir, scattered pure stands of large old growth redwood.
8	Japanese Bomb Site	H	T.40S., R.12W., Sec. 22. Landing site of incendiary bomb dropped Sept. 9, 1942 by Japanese during World War II.
9	West Moore Guard Station Site	H	T.41S., R.12W., Sec. 10. Site of the first ranger station in the Brookings-Harbor area. Built June 1910 - removed 1934. Now used as undeveloped campsite.
10	Wheeler's Grave	H	T.41S., R.12W., Sec. 10. Grave site of James Wheeler, an early settler in the Winchuck area (died 1903, approximate age 60).

#	Area (cont'd)	Type 1/	Description
11	Redwood Park	B	T.40S., R.13W., Sec. 13. Approx. 50 acres of redwood timber stand North Chetco River with trail. Excellent opportunity for amateur naturalist; 19 species of wildflowers, 11 trees, 5 shrubs, 7 ferns have been identified.
12	Navy Monument	H	T.39S., R.11W., Sec. 33. Crash site of a Navy PBY-5A on January 31, 1945. Navy monument erected 1957 for the 8 men aboard. Steep 5-mile hike to see graves and remains of the aircraft.
13	Windy Valley	S	T.37S., R.12W., Sec. 31. Picturesque, isolated valley with trail access only.
14	Snow Camp Meadow	S/B	T.38S., R.12W., Sec. 25. Scenic area with meadow - hiking access only.
15	Hahnzicker's Grave	H	T.41S., R.11W., Sec. 9. Grave site of Al Hahnzicker, early miner and USFS summer crew employee (died 1937); trail access.
16	Kalmiopsis Wilderness	B/H	Many points of interest, including botanical, historical (mining activity), and scenic areas.
17	Pyramid Rock Area	B	Flycatcher Springs (Darlingtonia plants)
18	Red Flats Area	H&B	Many botanical features in serpentine soil types, mining interests, and old cabins.
19	Ludlum House	H	T.41S., R.12W., Sec. 3. Home of early settler in the Winchuck area.
20	Packer Cabin	H	Early cabin originally used by Forest Service packers and other personnel.
21	Althouse-Sucker Cr. Area	H	Area of extensive gold mining activity in mid-1800's to early 1900's.
22	Josephine-Canyon Cr. Area	H	Area of extensive gold mining activity in mid-1850's to early 1900's. First gold discovered in area.
23	Sebastapole	H	Gravesite above road at old Josephine settlement site.
24	East Fork of Althouse Cr.	H	Largest gold nugget in Southern Oregon found here. (Weighed 17 lbs.) Discovered by Mattie Collins in 1859-valued at $3500.

#	Area	Type 1/	Description
25	Page Mt. (Cal-Dun Jct.)	R	A relic old growth timber stand. A healthy stand of Douglas-fir, Port-Orford that is fully stocked in the 5' to 10' d.b.h. range.
26	Black Butte-Sanger Peak Area	B	High elevation - subalpine type which includes a variety of rare plants such as Brewer's spruce and Saddler oak. The most scenic high elevation rugged peaks visible from Illinois Valley area.
27	Run Gulch Cabin	H	Bootlegger's cabin (well preserved)
28	Sourdough Area	H	Area of chrome mining activity in 1920-30's.
29	McGrew Trail	H	The original wagon road to Illinois Valley from coast.
30	Bain Station	H	Wagon stop on McGrew Trail.
31	Frantz Meadow	H/B	Meadow on Baldface Cr. that was cleared in 1920's? and is still a meadow.
32	Rough and Ready Lakes	B	Large variety of unusual plant species associated with serpentine bogs.
33	Josephine Cr. Area	B	Several communities of Darlingtonia plants.
34	Chetco Pass	H	Area of extensive chrome mining in 1930's.
35	McCaleb's Ranch	H	Present site of a Boy Scout Summer Camp.
36	Page Creek	H	Original district headquarters. No buildings left. Two large maple trees on site. One acre meadow.
37	Page Creek	B/H	Very early plantation of black walnut on south side of Page Cr., T.41S., R.8W., Sec. 2. Also one of the earliest timber sales.
38	Tennessee Pass	B	T.39S., R. 9W., Sec. 12. 200 yds. down from Tenn. Pass toward Josephine Cr. and above the road. A pine tree with both ends growing in the ground.
39	E. Fork Illinois River	H	Mining ditch approx. 15 miles long from E. Fork Illinois River to old mining cuts below Waldo L.O. Ditch is just below road near Waldo L.O.

#	Area	Type 1/	Description
40	Black Butte Area	B	Largest known Brewer's spruce, T.18N., R.5E., Sec. 36, 100 ft. above Dunn Cr. 52" d.b.h.
41	Wimer Road	H	Stone Corral, old stage stop on Wimer Rd., T.40S., R.9W., Sec. 34. Partially restored by NYC in 1975.
42	Sourdough Area	H	Mining and supply crossing on N. Fork Smith River about 50-100 yards above Baldface Cr.; monument established.
43	Iron Gulch	H	Mr. Adam's grave; killed 1930 by snow slide.
44	West Fork Althouse	H	Old Chinese oven.
45	Illinois River	H	Old Foster place; burial site of miner named Young.
46	Three Trees	B	Large knobcone pine. At one time it was on big tree register. Recently, a new champ was crowned.
47	Long Ridge	B	Very large canyon live oak.

1/ B = botanical interest; H = historical or archeological interest; R = on list of possible sites for Research Natural Areas; S = scenic area.

Table X - E-2 lists plants tentatively identified as threatened by the Smithsonian Institution (1975) or endangered by the Fish and Wildlife Service (1976) and which may be present on the Planning Unit. Some rare species, notably Kalmiopsis leachiana, are not included on this list; however, it may appear on a list of plants which are considered endangered, threatened, or rare in the State of Oregon. This list is being compiled by the Oregon Rare and Endangered Plant Species Task Force.

Table X - E-2. Floral Species Tentatively Identified as Threatened or Endangered and which may be Present on the Planning Unit.

Scientific Name	Common Name
Endangered Species: 1/	
Bensoniella oregana	Bensonia
Dicentra formosa var. oregana	Oregon Bleeding Heart
Erigeron delicatus	Del Norte Daisy
Erigonum hirtellum	Klamath Mt. Wild Buckwheat
Gentiana bisetaea	Waldo (Elegant) Gentian
Lilium occidentale	Western Lily

Scientific Name (cont'd)	Common Name
Microseris nutans ssp. siskiyouensis	Nodding Scorzonella
Plagiobothrys lamprocarpus	Shiny-Fruited Allocarya
Sanicula tracyi	Tracy's Sanicle
Sedum moranii	Glandular Stonecrop
Threatened Species: 2/	
Antennaria suffrutescens	Siskiyou or Shrubby Everlasting
Arabis aculeolata	Waldo Rock Cress
Arabis koehleri var. stipitata	Koehler's Rock Cress
Arabis oregana	Oregon Rock Cress
Arctostaphylos intricata var. oblongifolia	Siskiyou Manzanita
Arenaria paludicola	Swamp Sandwort
Aster brickellioides	Brickellbush or Rayless Leafy Aster
Castilleja brevilobata	Short-leaved Indian Paintbrush
Castilleja miniata ssp. elata	Slender Indian Paintbrush
Cypripedium californicum	California Lady's Slipper
Darlingtonia californica	California Pitcher Plant
Erigeron bloomeri var. nudatus	Bloomer's Daisy
Eryngium petiolatum	Rush Leaved Eryngo
Erythronium howellii	Howell's Adder's Tongue or Fawn Lilly
Erythronium oreganum	Giant Adder's Tongue
Haplopappus racemosus ssp. congestus	Racemose Pyrrocoma
Lewisia cotyledon	Imperial Lewisia
Lewisia oppositifolia	Opposite-Leaved Lewisia
Lilium volmeri	Volmer's Lilly
Lilium wigginsii	Wiggen's Lily
Limnanthes gracilis	Slender Meadow Foam
Microseris howellii	Howell's Microseris
Monardella purpurea	Siskiyou Monardella
Pedicularis howellii	Howell's Lousewort
Perideridia Erythrorhiza	Yampa
Phacelia peckii	Peck's Phacelia
Pityopus californicus	Pinefoot
Plagiobothrys hirtus ssp. corallicarpa	Rough Allocarya
Schoenolirion bracteosum	Large Flowered Rush Lilly
Sedum laxum ssp. heckneri	Lax Stonecrop
Senicio hesperius	Siskiyou Butterweed
Sidalcea cusickii	Cusick's Sidalcea
Sidalcea malvaeflora ssp. elegans	Mallow Sidalcea
Sidalcea setosa	
Sophora leachiana	Western Sophora
Tauschia howellii	Howell's Tauschia
Thlaspi montanum var. siskiyouensis	Pennycress or Wild Candytuft
Vaccinium coccinium	A Huckleberry
Vancouveria chrysantha	Yellow Vancouveria
Viola lanceolata ssp. occidentalis	Western Violet

1/ Fish and Wildlife Service. 1976. Proposed Endangered Status for me 1700 U.S. Vascular Plant Taxa. In: Federal Register, vol. 41, no. 117 - Wednesday, June 16.

2/ Smithsonian Institution. 1975. Report on Endangered and Threatened Plant Species of the United States presented to the Congress of the United States of America. G.P.O. Washington, D.C.

Table IX - E-3 lists amphibians, reptiles, and mammals that inhabit the Siskiyou National Forest. The amphibian, reptile and mammal lists are fairly inclusive.

Table IX - E-3. Wildlife

Scientific Name	Common Name
AMPHIBIANS:	
Ambystoma macrodactylum sigillatum	Long Toed Salamander (Southern ssp.)
Ambystoma gracile gracile	Northwestern Salamander (Southern ssp.)
Dicamptodon ensatus	Pacific Giant Salamander
Rhyacotriton olympicus variegatus	Olympic Salamander (Southern ssp.)
Taricha granulosa	Northern Rough-Skinned Newt
Plethodon dunni	Dunn's Salamander
Plethodon elongatus	Del Norte Salamander
Plethodon stormi	Siskiyou Mountain Salamander
Ensatina eschscholtzi oreganensis	Oregon (Red) Salamander
Ensatina eschscholtzi picta	Painted Salamander
Batrachoseps attenuatus	California Slender Salamander
Aneides ferreus	Clouded Salamander
Ascaphus truei	Tailed Frog
Bufo boreas boreas	Western Toad (Borseal ssp.)
Hyla regilla	Pacific Tree Frog
Rana aurora aurora	Northern Red-Legged Frog
Rana boylei	Foothill Yellow-Legged Frog
Rana catesbeiana	Bullfrog
REPTILES:	
Sceloporus occidentalis occidentalis	Fence Lizard (Northern ssp.
Sceloporus graciosus graciosus	Sage Brush Lizard (Northern ssp.)
Eumeces skiltonianus skiltonianus	Western Skink (Western ssp.)
Gerrhonotus coeruleus principis	Northern Alligator Lizard (Northern ssp.)
Gerrhonotus multicarinatus scincilauda	Southern Alligator Lizard (Oregon ssp.)
Charina bottae bottae	Rubber Boa (Pacific ssp.)
Diadophis punctatus occidentalis	Ringneck Snake (Northwestern ssp.)
Contia tenuis	Sharp-Tailed Snake (Has not yet been found on the Siskiyou.)
Coluber constrictor mormon	Racer (Western Yellow-Bellied ssp.)
Pituphis melanoleucus catenifer	Gopher Snake (Pacific ssp.)
Lampropeltis getulus californiae	California (Common) Kingsnake
Lampropeltis zonata	Mountain (California) Kingsnake
Thamnophis sirtalis fitchi	Common Garter Snake (Valley ssp.)
Thamnophis elegans elegans	Western Terrestrial Garter Snake
Thamnophis elegans terrestris	Western Terrestrial Garter Snake (Coast ssp.)
Thamnophis couchi hydrophila	Western Aquatic Garter Snake (Oregon ssp.)
Thamnophis ordinoides	Northwestern Garter Snake
Crotalus viridis oreganus	Western Rattlesnake (Northern Pacific ssp.)
Clemmys marmorata marmorata	Western Pond Turtle (Northwestern ssp.)

Scientific Name (cont'd)	Common Name
MAMMALS:	
Didelphis marsupialis	Oppossum (Has been reported near the Rogue River in Grants Pass in the early 1970's.)
Sorex obscurus	Dusky Shrew
Sorex pacificus	Pacific Shrew
Sorex vagrans	Vagrant Shrew
Sorex bendirei	Marsh Shrew
Sorex trowbridgei	Trowbridge Shrew
Scapanus townsendi	Townsend Mole
Scapanus orarius	Coast Mole
Neurotrichus gibbsi	Shrew-Mole
Myotis lucifugus	Little Brown Myotis (Bat)
Myotis thysanodes	Fringed Myotis
Myotis californicus	California Myotis
Myotis volans	Hairy-Winged Myotis
Myotis evotis	Long-Eared Myotis
Myotis yumanensis	Yuma Myotis
Lasionycteris noctivagans	Silver-Haired Bat
Lasiurus cinereus	Hoary Bat
Eptesicus fuscus	Big Brown Bat
Plecotus townsendi	Western Big-Eared Bat
Antrozous pallidus	Pallid Bat (May Occur)
Tadarida brasiliensis	Brazilian Free-Tailed Bat (Probably does not occur on the Siskiyou.)
Lepus californicus	Blacktail Hare or Jackrabbit
Lepus americanus	Snowshoe Hare
Sylvilagus bachmani	Brush Rabbit
Aplodontia rufa	Mountain Beaver
Otospermophelus beecheyi	California (Beechey) Ground Squirrel
Callospermophilus lateralis	Sierra Nevada Golden-Mantled Ground Squirrel
Eutamias townsendi	Townsend Chipmunk
Sciurus griseus	Western Gray Squirrel
Tamiasciurus douglasi	Douglas Squirrel or Chickaree
Glaucomys sabrinus	Northern Flying Squirrel
Thomomys bottae	Botta Pocket Gopher
Thomomys mazama	Mazama Pocket Gopher
Castor canadensis	Beaver
Reithrodontomys megalotis	Western Harvest Mouse
Peromyscus truei	Pinyon Mouse
Peromyscus maniculatus	Deer Mouse
Neotoma fuscipes	Dusky-Footed Woodrat (Packrat)
Neotoma cinerea	Bush-Tailed Woodrat (Packrat)
Phenacomys albipes	White-Footed Vole or Pacific Phenacomys
Phenacomys longicaudus	Red Tree Mouse
Clethrionomys occidentalis	Western Red-Backed Mouse
Microtus longicaudus	Longtail Meadow Mouse

Scientific Name (cont'd)	Common Name
Microtus oregoni	Oregon Meadow Mouse
Microtus californicus	California Meadow Mouse
Microtus townsendi	Townsend Meadow Mouse
Ondatra zibethica	Muskrat
Mus musculus	House Mouse
Zapus trinotatus	Pacific Jumping Mouse
Erethizon dorsatum	Porcupine
Vulpes fulva	Red Fox (There have been recent reports of Red Fox in the Grants Pass area.)
Urocyon cinereoargenteus	Gray Fox
Canis latrans	Coyote
Ursus americanus	Black Bear
Procyon lotor	Raccoon
Bassariscus astutus	Ringtail "Cat"
Martes americana	Marten
Martes pennanti	Fisher
Mustela vison	Mink
Mustela frenata	Longtail Weasel
Mustela erminea	Ermine or Shorttail Weasel
Gulo luscus	Wolverine (May occur on the Siskiyou; recent "sign" (1973) on the Gasquet District, Six Rivers, National Forest.)
Mephitis mephitis	Striped Skunk
Spilogale putorius	Spotted Skunk
Lutra canadensis	River Otter
Felis concolor	Cougar
Lynx rufus	Bobcat
Eumetopias jubatus	Steller (Northern) Sea Lion
Phoca vitulina	Harbor Seal
Cervus canadensis roosevelti	Roosevelt Elk
Odocoileus hemionus columbianus	Blacktail Deer

Table X - E-4 lists birds that inhabit the Siskiyou National Forest. The list is of necessity, indefinite. Birds are quite mobile and many species "pass through" only on migration. The bird list includes species which have not been sighted on the forest.

STATUS:

R - Resident; found all year

WR - Winter Visitor

SR - Summer Resident; breeds on Siskiyou

M - Migrant; seen only in transit, or irregular visitor

? - Status Undetermined

* - Hypothetical - has not been sighted on Forest, and in fact may not occur. If sighted, please inform Wildlife Biologist.

ABUNDANCE:

C - Common; occurs frequently, often in substantial numbers

U - Uncommon; occurs frequently, usually not in large numbers

O - Occasional; occurs regularly

R - Rare; occurs infrequently

A - Accidental; unusual, not expected, probably a "wanderer"

Adapted from: Check-list of the Birds of Oregon, by Bertrand and Scott. 1973. OSU Bookstores, Inc., Corvallis, Oregon.

Table X - E-4. Birds of the Siskiyou National Forest.

BIRDS OF THE SISKIYOU NATIONAL FOREST

Common Name	Scientific Name	Status	Preferred Habitat	Abundance
Common Loon	Gavia immer	M*	Ocean,Bays,Lakes	A
Horned Grebe	Podiceps auritus	M	Lakes,Rivers,Bays	O
Eared Grebe	Podiceps nigricollis	M	Lakes,Marshes,Rivers	O
Western Grebe	Aechmophorus accidentalis	M*	Bays,Lakes	R
Pied-billed Grebe	Podilymbus podiceps	M*	Rivers,Bays,Lakes	R
Double-crested Cormorant	Phalacrocorax auritus	R	Ocean,Bays,Lakes	O
Great Blue Heron	Ardea herodias	R	Bays,Lakes,Streams	C
Green Heron	Butorides virescens	R*	Marshes,Lakes,Streams	U
Cattle Egret	Bubulcus ibis	R*	Fields,Pastures	A
Great Egret	Casmerodius albus	SR	Marshes,Lakes	U
Snowy Egret	Egretta thula	SR*	Marshes,Lakes	A
Black-crowned Night Heron	Nycticorax nycticorax	?*	Marshes,Swamps	R
Whistling Swan	Olor columbianus	M*	Lakes,Rivers	A
Canada Goose	Branta canadensis	M*	Lakes,Rivers,Fields	R
White-fronted Goose	Anser albifrons	M	Lakes,Bays	R
Snow Goose	Chen c. caerulescens	M*	Lakes,Marshes	R
Mallard	Anas platyrhynchos	R	Lakes,Rivers,Bays	C
Gadwall	Anas strepera	M*	Marshes,Lakes	R
Pintail	Anas acuta	M*	Lakes,Ponds	R
Green-winged Teal	Anas crecca canolinensis	M	Marshes,Bays	R
Blue-winged Teal	Anas discors	M*	Marshes,Bays	R
Cinnamon Teal	Anas cyanoptera	SR	Marshes,Bays	R
European Wigeon	Anas penelope	M*	Bays,Lakes,Fields	A
American Wigeon	Anas americana	M*	Marshes,Bays,Lakes	R
Northern Shoveler	Anas clypeata	M*	Marshes,Lakes	R
Wood Duck	Aix sponsa	R	Lakes,Streams	C
Redhead	Aythya americana	M*	Bays,Ponds,Lakes	A
Ring-necked Duck	Aythya collaris	M*	Lakes,Ponds	R
Canvasback	Aythya valisineria	M*	Marshes,Bays	R
Greater Scaup	Aythya marila	M*	Bays,Lakes	R
Lesser Scaup	Aythya affinis	M*	Bays,Lakes	R
Common Goldeneye	Bucephala clangula	M*	Lakes,Ponds	R
Barrow's Goldeneye	Bucephala islandica	M*	Lakes	R
Bufflehead	Bucephala albeola	M*	Lakes,Bays	R

Common Name	Scientific Name	Status	Preferred Habitat	Abundance
Harlequin Duck	Histrionicus histrionicus	?*	Streams,Bays,Ocean	R
Ruddy Duck	Oxyura jamaicensis	M*	Lakes,Bays	R
Hooded Merganser	Lophodytes cucullatus	M	Lakes	R
Common Merganser	Mergus merganser	R	Streams,Lakes	C
Red-brested Merganser	Mergus serrator	M*	Coastal Bays,Rivers	R
Turkey Vulture	Cathartes aura	SR	Many habitats; some openings present	C
White-tailed Kite	Elanus leucurus	?*	Foothills, Marshes	A
Goshawk	Accipiter gentilis	R	Coniferous Forests	R
Sharp-shinned Hawk	Accipiter striatus	R	Forests,Woodlands	U
Cooper's Hawk	Accipiter cooperii	R	Woodlands,Canyons	U
Red-tailed Hawk	Buteo jamaicensis	R	Woodlands,Farm Lands	C
Swainson's Hawk	Buteo swainsoni	M*	Dry Plains,Foothills	A
Rough-legged Hawk	Buteo lagopus	M*	Open Plains,Marshes	A
Ferruginous Hawk	Buteo regalis	M*	Open Rangeland	A
Golden Eagle	Aquila chrysaetos	R	Mountains,Plains	U
Bald Eagle	Haliaeetus lencocephalus	R	Coast,Lakes,Rivers	U
Marsh Hawk	Circus cyaneus	M	Open Fields,Marshes	R
Osprey	Pandion haliaetus	SR	Lakes,Rivers,Coast	U
Peregrine Falcon	Falco peregrinus	M	Open Country,Cliff Areas	R
Pigeon Hawk or Merlin	Falco columbarius	R*	Woodlands	R
Sparrow Hawk or American Kestrel	Falco aparverius	R	Open Country,Parkland	U
Blue Grouse	Dendragapus obscurus	R	Wooded slopes,Forest	C
Ruffed Grouse	Bonasa umbellus	R	Mixed or Decid.Woods	U
California Quail	Lophortyx californicus	R	Woodlands,Brush	C
Mountain Quail	Oreortyx pictus	R	Woodlots,Forests	U
Ring-necked Pheasant	Phasianus colchicus	R*	Agricultural Areas	R
Turkey	Meleagris gallapavo	R	Broken Woodlands	O
American Coot	Fulica americana	R*	Lakes,Bays,Marshes	O
Killdeer	Charadrius vociferus	R	Fields,Mudflats	U
Common Snipe	Capella gallinago	R	Marshes,Wet Meadows	U
Spotted Sandpiper	Actitus macularia	R	Streams,Lakes,Ponds	C
Solitary Sandpiper	Tringa solitaria	M*	Streams,Fresh Marshes	R
Greater Yellowlegs	Tringa melanoleucus	?*	Marshes,Mudflats	R
Lesser Yellowlegs	Tringa flavipes	?*	Marshes,Mudflats	R

Common Name	Scientific Name	Status	Preferred Habitat	Abundance
Western Gull	Larus occidentalis	R	Ocean,Bays,Lakes	U
Herring Gull	Larus argentatus	WV	Ocean,Bays,Lakes	O
California Gull	Larus californicus	R	Bays,Lakes,Rivers	U
Ring-billed Gull	Larus delawarensis	M*	Ocean,Bays,Lakes	R
Mew Gull	Larus canus	M*	Ocean,Bays,Rivers	R
Bonaparte's Gull	Larus philadephia	M*	Ocean,Bays,Lakes	R
Arctic Tern	Sterna paradisaea	M*	Ocean,Lakes	A
Caspian Tern	Hydroprogne caspia	M*	Lakes,Bays,Ocean	A
Band-tailed Pigeon	Columba fasciata	SR,M	Coast Conifers	C
Rock Dove	Columba livia	R	Urban,Rock Scarps	R
Mourning Dove	Zenaida macroura	R	Fields	O
Barn Owl	Tyto alba	R*	Abandoned Buildings;Natural Cavities	O
Screech Owl	Otus asio	R	Deciduous Woods	C
Flammulated Owl	Otus flammeolus	?*	Ponderosa Pine	A
Great Horned Owl	Bubo virginianus	R	All Areas	C
Snowy Owl	Nyctea scandiaca	WV	Dunes,Fields,Open Areas	A
Pygmy Owl	Glaucidium gnoma	R	All Areas	C
Burrowing Owl	Speotyto cunicularia	R*	Dry Grasslands	A
Spotted Owl	Strix occidentalis	R	Thickets,Mixed Woods	U
Great Grey Owl	Strix nebulosa	R*	Conifer Forests with Meadows	A
Long-eared Owl	Asio otus	R	Mixed Woods	R
Short-eared Owl	Asio flammeus	R*	Fields,Marshes	A
Saw-whet Owl	Aegolius acadicus	R	Mixed Woods	U
Poor-will	Pholaenoptilus nuttallii	SR*	Rock Scarps	A
Common Nighthawk	Chordeiles minor	SR	All Open Lands	A
Vaux's Swift	Chaetura vauxi	SR	Mixed Woods	U
Anna's Hummingbird	Calypte anna	WV	Residential Areas	R
Rufous Hummingbird	Selasphorus rufus	SR	Mixed Woods,Fields	C
Allen's Hummingbird	Selasphorus sasin	?	Coast,Urban Areas	R
Calliope Hummingbird	Stellula calliope	SR	Mountain Meadows	R
Belted Kingfisher	Megaceryle alcyon	R	Streams,Bays,Rivers	C
Common Flicker	Colaptes auratus	R	Mixed Woods	C
Pileated Woodpecker	Dryocopus pileatus	R	Conifers	U
Acorn Woodpecker	Melanerpes formicivorus	R	Oak Groves	U
Lewis Woodpecker	Asyndesmus lewis	R	All Woods	R

Common Name	Scientific Name	Status	Preferred Habitat	Abundance
Yellow-bellied Sapsucker	Syphrapicus varius	R	Mixed Woods.	U
Williamson's Sapsucker	Syphrapicus thyroideus	R	Ponderosa Pine	R
Hairy Woodpecker	Dendrocopos villosus	R	Mixed Woods,Conifers	U
Downy Woodpecker	Dendrocopos pubescens	R	Mixed Woods, Deciduous	U
White-headed Woodpecker	Dendrocopos albolarvatus	R	Ponderosa Pine	R
Black-backed Three-toed Woodpecker	Picoides arcticus	R	True Fir or Lodgepole Pine	A
Northern Three-toed Woodpecker	Picoides tridactylus	R*	True Fir or Lodgepole Burns	A
Western Kingbird	Tyrannus verticalis	SR	Ranches,Open Areas	O
Ash-throated Flycatcher	Myiarchus cinerascens	SR*	Open Woodland,Chaparral	R
Black Phoebe	Sayornis nigricans	SR*	Fields,Mixed Woods	R
Willow Flycatcher	Empidonax traillii	SR	Wooded Streams	U
Hammond's Flycatcher	Empidonax hammondi	SR	Conifers	U
Dusky Flycatcher	Empidonax oberhalseri	SR	Scrub,Hillsides	U
Western Flycatcher	Empidonax difficilis	SR	Deciduous Woods,Conifers	U
Western Wood Peewee	Contopus sordidulus	SR	Conifers,All Woods	C
Olive-sided Flycatcher	Nuttallornis borealis	SR	Mixed Woods	U
Horned Lark	Eremophila alpestris	R*	Open Fields,Alpine	R
Violet-green Swallow	Tachycineta thalassina	SR	Around Water	U
Tree Swallow	Iridoprocne bicolor	SR	Rivers,Mountain Lakes	C
Rough-winged Swallow	Stelgidopteryx ruficollis	SR	Around Water	R
Barn Swallow	Hirundo rustica	SR	Around Water	U
Cliff Swallow	Petrochelidon pyrrhonota	SR	Rock Scarps,Buildings	C
Purple Martin	Progne subis	SR	Around Water	R
Gray Jay	Perisoreus canadensis	M	Mountain Conifers	R
Steller's Jay	Cyonocitta stelleri	R	Mixed Conifers	C
Scrub Jay	Aphelocoma coerulescens	R	Brush,Urban Areas	U
Common Raven	Corvus corax	R	Mountain,Rock scarps	U
Common Crow	Corvus branchyrhynchos	R	Open Woods,Farms	O
Clark's Nutcracker	Nucifraga columbiana	M	Timberline Conifers	O
Black-capped Chickadee	Parus atricapillus	R	Deciduous Woods,Conifer Edges	C
Mountain Chickadee	Parus gambeli	R	Conifers	U
Chestnut-backed Chickadee	Parus rufescens	R	Conifers,Mixed Woods	U
Plain Titmouse	Parus inornatus	R*	Chaparral	R
Common Bushtit	Psaltriparus minimus	R	Deciduous Woods	C

Common Name	Scientific Name	Status	Preferred Habitat	Abundance
White-breasted Nuthatch	Sitta carolinensis	R	Deciduous,Mixed Woods	C
Red-breasted Nuthatch	Sitta canadensis	R	Conifers,Mixed Woods	C
Pygmy Nuthatch	Sitta pygmaea	M	Ponderosa Pine	A
Brown Creeper	Certhia familiaris	R	Conifers,Mixed Woods	U
Wrentit	Chamaea fasciata	R	Coast,Mixed Woods	O
Dipper	Cinclus mexicanus	R	Mountain Streams	U
House Wren	Troglodytes aedon	SR	Deciduous Woods,Brush	C
Winter Wren	Troglodytes troglodytes	R	Dense Conifers	C
Bewick's Wren	Thryomanes bewickii	R	Deciduous Woods	C
Canon Wren	Catherpes mexicanus	?*	Rock Rims,Canyons	R
Rock Wren	Salpinctes obsoletus	R	Rock Rims,Boulders	R
Mockingbird	Mimus polyglottos	?*	Ranches,Urban Areas	A
American Robin	Turdus migratorius	R	Fields,Residential, Forest Openings	C
Varied Thrush	Ixoreus naevius	R,M	Conifers,Mixed Woods	C
Hermit Thrush	Catharus guttata	R	Deciduous Woods,Conifers	U
Swainson's Thrush	Catharus ustulata	SR	Conifers,Mixed Woods	C
Western Bluebird	Sialia mexicana	R	Open Woods	U
Mountain Bluebird	Sialia currucoides	R	Open Forest in Mountains	O
Townsend's Solitaire	Myadestes townsendi	R	Conifers	U
Golden-crowned Kinglet	Regulus satrapa	R	Conifers	C
Ruby-crowned Kinglet	Regulus calendula	R	Mixed Woods,Conifers	U
Water Pipit	Anthus spinoletta	R	Fields,Mountains	O
Bohemian Waxwing	Bombycilla garrulus	WV*	Deciduous Woods	A
Cedar Waxwing	Bombycilla cedrorum	R	Open Woods,Near Water	U
Northern Shrike	Lanius excubitor	M*	Open Country	A
Loggerhead Shrike	Lanius ludovicianus	M	Open Country	R
Starling	Sturnus vulgaris	R	Open Fields,Farms	U
Hutton's Vireo	Vireo huttoni	R	Conifers,Mixed Woods	R
Solitary Vireo	Vireo solitarius	SR	Deciduous Woods	U
Red-eyed Vireo	Vireo olivaceus	SR*	Deciduous Woods	R
Warbling Vireo	Vireo gilvus	SR	Deciduous Woods	O
Orange-crowned Warbler	Vermivora celata	SR	Brush,Low Shrubs	C
Nashville Warbler	Vermivora ruficapilla	SR	Oak,Brushy Slopes	U
Yellow Warbler	Dendroica petechia	SR	Stream Bottoms	U
Yellow-rumped Warbler	Dendroica coronata	R	Streams	C
Black-throated Gray Warbler	Dendroica nigrescens	SR	Mixed Woods,Shrubby Openings	U

Common Name	Scientific Name	Status	Preferred Habitat	Abundance
Townsend's Warbler	Dendroica townsendi	WV	Conifers	U
Hermit Warbler	Dendroica occidentalis	SR	Conifers	U
MacGillivray's Warbler	Oporornis tolmiei	SR	Mixed Woods,Brush	C
Common Yellowthroat	Geothlypis trichas	SR	Fresh-water Marshes	O
Yellow-breasted Chat	Icteria virens	SR	Moist Thickets	U
Wilson's Warbler	Wilsonia pusilla	SR	Deciduous Woods	C
House Sparrow	Passer domesticus	R	Residential,Farms	R
Western Meadowlark	Sturnella neglecta	R	Open Fields	U
Red-winged Blackbird	Agelaius phoeniceus	R	Fresh-water Marshes	U
Tricolored Blackbird	Agelaius tricolor	SR*	Freshwater Marshes	R
Northern Oriole	Icterus galbula	SR	Shade Trees,Irrigated Valleys	O
Brewer's Blackbird	Euphagus cyanocephalus	R	Fields,Farms	U
Brown-headed Cowbird	Molothrus ater	SR	Fields,Farms	U
Western Tanager	Piranga ludoviciana	SR	Conifers	C
Black-headed Grosbeak	Pheucticus melanocephalus	SR	Deciduous Woods	U
Lazuli Bunting	Passerina amoena	SR	Thickets	U
Evening Grosbeak	Hesperiphona vespertina	R	Conifers,Deciduous Woods	U
Purple Finch	Carpodacus purpureus	R	Conifers,Deciduous Woods	U
Cassin's Finch	Carpodacus cassinii	?*	True Fir	A
House Finch	Carpodacus mexicanus	R	Residential,Farms	U
Common Redpoll	Acanthis flammea	WV*	Brushy Areas	A
Pine Siskin	Spinus pinus	R	Conifers,Mixed Woods	C
American Goldfinch	Spinus tristis	R	Grasslands	C
Lesser Goldfinch	Spinus psaltria	R	Grasslands	U
Red Crossbill	Loxia curvirostra	R	Conifers	U
White-winged Crossbill	Loxia leucoptera	WV*	Conifers	A
Green-tailed Towhee	Chlorura chlorura	SR	Chaparral,Thickets	R
Rufous-sided Towhee	Pipilo erythrophthalmus	R	Thickets	C
Brown Towhee	Pipilo fuscus	?*	Chaparral	R
Savannah Sparrow	Passerculus sandwitchensis	R	Open Fields,Dunes	C
Vesper Sparrow	Pooecetes gramineus	SR*	Fields,Farms	U
Dark-eyed Junco	Junco hyemalis	R	Brush,Mixed Woods, Conifers, Deciduous	C
Chipping Sparrow	Spizella passerina	SR	All Open Areas	U
Harris' Sparrow	Zonotrichia querula	WV*	Open Fields	O
White-crowned Sparrow	Zonotrichia leucophrys	R	Willows,Open Brush	C
Golden-crowned Sparrow	Zonotrichia atricapilla	WV	Weed Patches	C

Common Name	Scientific Name	Status	Preferred Habitat	Abundance
White-throated Sparrow	Zonotrichia albicollis	WV*	Open Brush,Thickets	R
Fox Sparrow	Passerella iliaca	R	Thickets,Brush	U
Lincoln's Sparrow	Melospiza lincolnii	SR	Wet Meadows,Streams	R
Song Sparrow	Melospiza melodia	R	Thickets,Brush	C

TITLE 2300 - RECREATION MANAGEMENT

Exhibit 1

National Forest CAMP AND PICNIC SITE LEVELS OF: ENVIRONMENTAL MODIFICATION & RECREATION EXPERIENCES

DEVELOPMENT SCALE	ENVIRONMENTAL MODIFICATION	RECREATION EXPERIENCES
1 primitive	Minimum site modification. Rustic or rudimentary improvements designed for protection of the site rather than comfort of the users. Use of synthetic materials avoided. Minimum controls are subtle. No obvious means regimentation. Spacing informal and extended to minimize contacts with others. Motorized access not provided or permitted.	Primitive forest environment is dominant. Rudimentary and isolated development sites beyond the sight or sound of inharmonious influences. Maximum opportunity for experiencing solitude, testing skills and compensating for the routines of daily living. User senses no regimentation. Feelings of physical achievement in reaching site is important.
2 secondary primitive	Little site modification. Rustic or rudimentary improvements designed for protection of the site rather than comfort of the users. Use of synthetic materials avoided. Minimum controls are subtle. Little obvious regimentation. Spacing informal and extended to minimize contacts with others. Motorized access provided or permitted. Primary access over primitive roads.	Near primitive forest environment. Outside influences present but minimized. Feeling of accomplishment associated with low standard access is important but does not necessarily imply physical exertion to reach site. Opportunity for solitude and chance to test outdoor skills is present.
3 intermediate	Site modification moderate. Facilities about equally for protection of site and comfort of users. Contemporary/rustic design of improvements is usually based on use of native materials. Inconspicuous vehicular traffic controls usually provided. Roads may be hard surfaced and trails formalized. Development density about 3 family units per acre. Primary access to site may be over high standard well traveled roads. VIS, if available, is informal and incidental.	Forest environment is essentially natural. Important that a degree of solitude is combined with some opportunity to socialize with others. Controls and regimentation provided for safety and well-being of user sufficiently obvious to afford a sense of security but subtle enough to leave the taste of adventure.
4 secondary modern	Site heavily modified. Some facilities designed strictly for comfort and convenience of users but luxury facilities not provided. Facility designs may tend toward and incorporate synthetic materials. Extensive use of artificial surfacing of roads and trails. Vehicular traffic controls present and usually obvious. Primary access usually over paved roads. Development density 3-5 family units per acre. Plant materials usually native. Visitor Information Services frequently available.	Forest environment is pleasing and attractive but not necessarily natural. Blending of opportunities for solitude and socializing with others. Testing of outdoor skills on site mostly limited to the camping activity. Many user comforts available. Contrast to daily living routines is moderate. Invites marked sense of security.
5 modern	High degree of site modification. Facilities mostly designed for comfort and convenience of users include flush toilets; may include showers, bath houses, laundry facilities, and electrical hookups. Synthetic materials commonly used. Formal walks or surfaced trails. Regimentation of users is obvious. Access usually by high speed highways. Development density 5 or more family units per acre. Plant materials may be foreign to the environment. Formal VIS services usually available. Designs formalized and architecture may be contemporary. Mowed lawns and clipped shrubs not unusual. (Class 5 sites only provided in special situations or close to large cities where other lands are not available.)	Pleasing environment attractive to the novice or highly gregarious camper. Opportunity to socialize with others very important. Satisfys urbanites need for compensating experiences and relative solitude but less intensive than in classes 1-4. Obvious to user that he is in secure situation where ample provision is made for his personal comfort and he will not be called upon to use undeveloped skills.

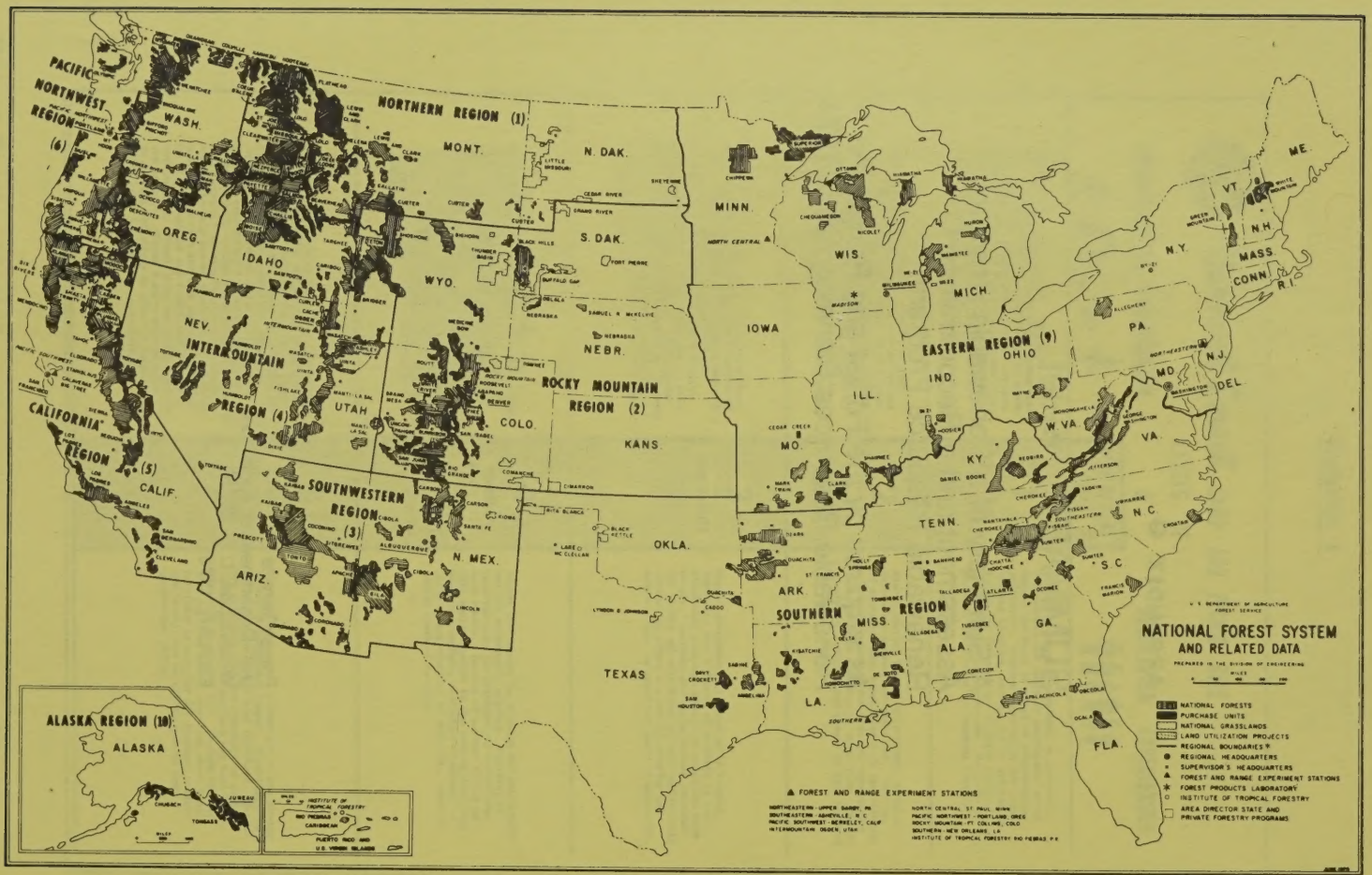
APPENDIX G

SUMMARY (Partial)

A Summary of a Renewable Resource Assessment and a Recommended Renewable Resource Program.

As required by the Forest and Rangeland Renewable Resources Planning Act of 1974

Forest Service
U.S. Department of Agriculture
Washington, D.C. 20250
February 1976


NORTHERN REGION (1)
PACIFIC NORTHWEST REGION (6)
ROCKY MOUNTAIN REGION (2)
INTERMOUNTAIN REGION (4)
CALIFORNIA REGION (5)
SOUTHWESTERN REGION (3)
EASTERN REGION (9)
SOUTHERN REGION (8)
ALASKA REGION (10)
WASH.
OREG.
CALIF.
IDAHO
NEV.
MONT.
WYO.
UTAH
COLO.
ARIZ.
N. MEX.
N. DAK.
S. DAK.
NEBR.
KANS.
OKLA.
TEXAS
MINN.
IOWA
MO.
ARK.
LA.
MISS.
ALA.
GA.
FLA.
S. C.
N. C.
TENN.
KY.
W. VA.
VA.
OHIO
IND.
ILL.
MICH.
WIS.
PA.
N. Y.
ME.
VT.
N. H.
MASS.
CONN.
R. I.
N. J.
DEL.
MD.
ALASKA
NATIONAL FOREST SYSTEM AND RELATED DATA
NATIONAL FORESTS
PURCHASE UNITS
NATIONAL GRASSLANDS
LAND UTILIZATION PROJECTS
REGIONAL BOUNDARIES
REGIONAL HEADQUARTERS
SUPERVISOR'S HEADQUARTERS
FOREST AND RANGE EXPERIMENT STATIONS
FOREST PRODUCTS LABORATORY
INSTITUTE OF TROPICAL FORESTRY
AREA DIRECTOR STATE AND PRIVATE FORESTRY PROGRAMS
FOREST AND RANGE EXPERIMENT STATIONS
NORTHEASTERN - UPPER DARBY, PA
SOUTHEASTERN - ASHEVILLE, N. C.
PACIFIC SOUTHWEST - BERKELEY, CALIF.
INTERMOUNTAIN - OGDEN, UTAH
NORTH CENTRAL - ST. PAUL, MINN.
PACIFIC NORTHWEST - PORTLAND, OREG.
ROCKY MOUNTAIN - FT. COLLINS, COLO.
SOUTHERN - NEW ORLEANS, LA.
INSTITUTE OF TROPICAL FORESTRY - RIO PIEDRAS, P.R.

INTRODUCTION

In 1974, Congress enacted legislation to provide long-term planning for the Nation's renewable resources. The Forest and Rangeland Renewable Resources Planning Act directs the Secretary of Agriculture to periodically assess the national situation of the forest and rangeland resources, and to submit, at regular intervals, recommendations for long-range Forest Service programs essential to meet future needs for those resources. The program recommendations are to cover all the activities of the Forest Service. This document summarizes the response of the Forest Service to that legislative direction.

The Forest Service in the U.S. Department of Agriculture is responsible for Federal leadership in forestry, including the management, protection and utilization of the natural resources on forests and related rangelands—one-third of the Nation's land. It carries out this role through several main activities: (1) Protection and management of resources on 187 million acres of National Forest System lands; (2) cooperation with State and local governments, forest industries and private landowners to help protect and manage 631 million acres of non-Federal forest and associated range and watershed land; (3) research in various aspects of forestry conducted at 80 different laboratories and other scientific facilities throughout the country; and (4) participation with other agencies in manpower, youth and community assistance programs seeking to improve living conditions in rural areas.

The results of the first assessment and planning activities undertaken by the Forest Service to implement the Forest and Rangeland Renewable Resources Planning Act of 1974 are covered fully in the two documents: **The Nation's Renewable Resources—An Assessment;** and **A Recommended Renewable Resources Program.**

The Assessment utilizes all pertinent information compiled by the Forest Service and other agencies. However, it rests on two basic assumptions about future population and future income.

The U.S. population, which has been increasing at an annual rate of 1.3 percent a year, is expected to continue growing. Assuming validity of the Census Series II projection—the medium propection—population will rise another 86 million by the year 2020. In the same period per capita disposable income is expected to triple in terms of constant 1967 dollars (dollars with the same purchasing power as in base year 1967).

Thus, more people with more money at their disposal will place greater demands upon all the resources of the Nation's forest land.

The Recommended Renewable Resources Program was derived from the Assessment. That Program recommends the following program policy direction for the Forest Service:

> "Intensify Forest Service program efforts that yield long-term benefits commensurate with investment costs in accord with these underlying principles: (1) Dispersed recreation opportunities will be emphasized along with a moderate allocation of National Forest lands to statutory wilderness designation; (2) Timber and Range programs shall give priority to the most cost-effective resource management opportunities; and (3) Program efforts relative to wildlife and fish, land and water stewardship, and human and community development shall be enhanced."

Examples of some of the long-term benefits of the Recommended Program that could be provided are: Recreation use in National Forests, both developed and dispersed, could increase from 198 million recreation visitor days (a visitor day is equivalent to one visit for 12 hours) in 1975 to a range of 276 to 342 million in 2020. In the area of commodity production, livestock grazing on National Forest lands could increase from the present 11.3 million animal unit months (an animal unit month is forage for one mature cow for one month) to a range of 18.0 to 20.4 million in 2020; timber sale offerings from those lands could increase from the current level of 2.4 billion cubic feet to a range of 3.3 to 4.1 billion cubic feet per year in the decade 2011–2020. State and private lands could be boosted similarly in productivity. And, research activities could be intensified to support these efforts.

Chapter One

THE RESOURCES PLANNING ACT

The Recommended Renewable Resource Program, along with the Assessment and considerations leading to it, result from the direction given by the Congress in the Forest and Rangeland Renewable Resources Planning Act of 1974—hereafter called the Resources Planning Act (RPA).

That Act calls for long-range planning adequate to insure that Forest Service programs make appropriate contributions to meet the Nation's future needs. The RPA calls for information to be developed for decision-making and for identification of the wide array of issues which can affect the use of natural resources over decades to come.

The RPA describes a process through which program and policy alternatives are to be articulated and considered. The Forest Service must periodically prepare a Renewable Resources Assessment and also present a series of long-range Renewable Resources Programs that are responsive to changes anticipated in the years ahead.

The Assessment and the Program are to be transmitted to Congress now and, with updating, again in 1980. Also, the Act requires a new Assessment every 10 years thereafter, and a Program revision every 5 years.

To translate goals into tentative action programs and annual budgets, an "objective oriented" planning process has been established.

The Assessment provides a physical inventory and a description of the overall situation—the problems and opportunities, potential supply and likely demand, a view of prices related to various output levels, and impacts which can be expected.

Then, based on the Assessment, the next step is the development of the Renewable Resources Program that is the Secretary of Agriculture's recommendation for Forest Service actions to help solve the problems and take advantage of the opportunities identified in the Assessment. The Program also displays the alternatives among which choices are made.

The Act addresses program funding in two ways. First, it calls upon the President to transmit, with the Assessment and Recommended Program, a Statement of Policy which expresses his intentions with respect to framing budget requests for the Forest Service for the 5- or 10-year period ahead. Second, when the President's budget is transmitted to Congress each year it will be accompanied by a budget explanation describing the relationship between the budget request and the Program.

A dialogue between the Executive and Legislative Branches is set into motion by the Resources Planning Act. Congress may revise or modify the Statement of Policy transmitted by the President. If serious differences exist, the Act's procedural guidelines can lead to discussions between Executive and Legislative leaders to clarify and resolve issues.

Congressional disposition of Program recommendations can be most accurately gauged by the patterns of annual appropriations to the Forest Service for the support of those recommendations. The Act calls for an annual evaluation report on Forest Service progress and accomplishments to assist in future negotiations and decisionmaking. Thus, it establishes a management process that assures coordination among long-term goals, action programs designed to achieve specific goals, budgets tailored to necessary programs, and annual evaluation of accomplishments.



Data for each System was analyzed F.S.-523532

Chapter Two

THE ASSESSMENT

The Resources Planning Act calls for physical data and social and economic information about all the Nation's renewable resources of forest, range and related lands. This information includes: an up-to-date inventory; an estimate of future uses and demands; and ways that, from the physical, social, and economic standpoint, we can affect the yield from those resources.

Findings from the Assessment provide the necessary background for discussion of goals, targets and programs. The Assessment shows that:

1. Demands for forest and range products and services have been rising rapidly—and projections indicate a continuation of this trend.

Growth has been especially fast for some forms of outdoor recreation. (For example, the number of households camping more than tripled between 1960 and 1973, from 4.3 million to 14.3 million.) Increases for most other services and products were more modest, but substantial. (Between 1960 and 1970, for example, hunting and fishing use rose from 563 million days to 771 million. Timber consumption during that same period was up 22 percent.)

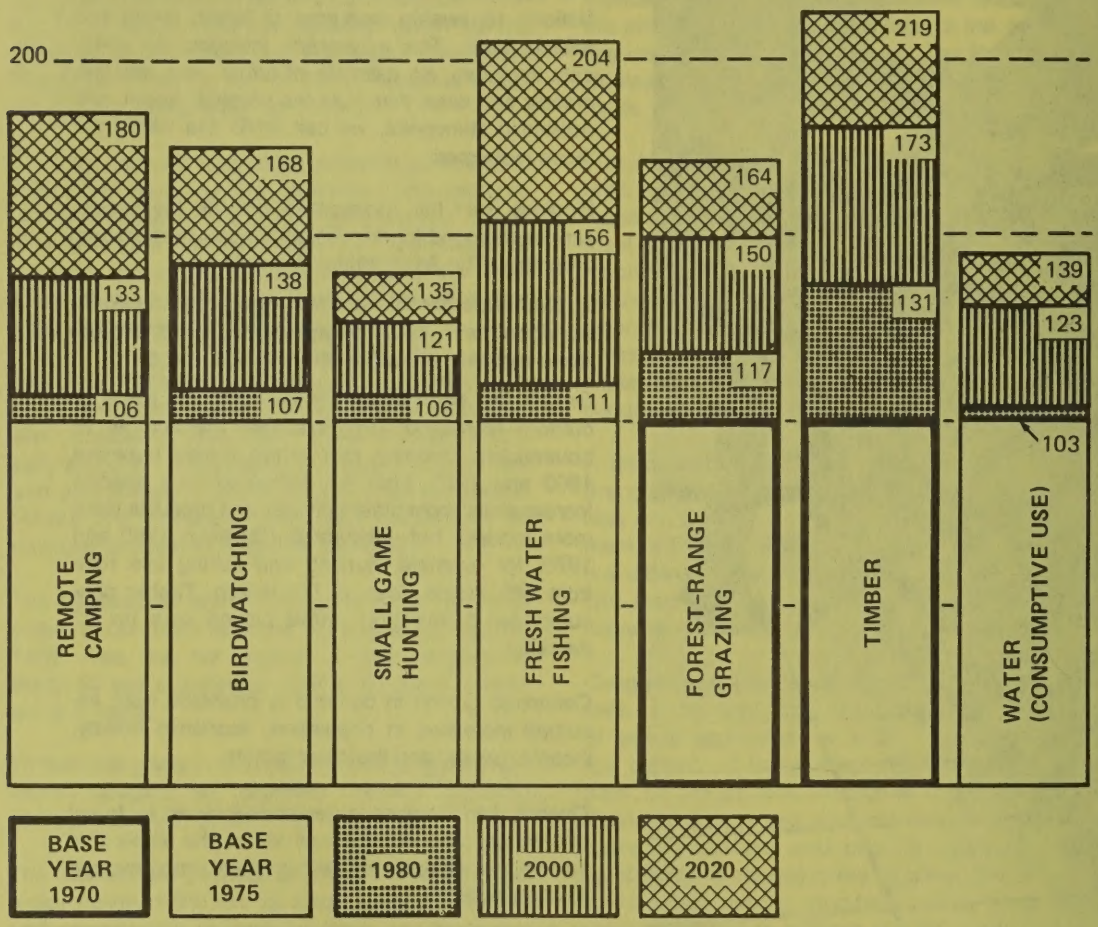
Continued growth in demand is projected from assumed increases in population, economic activity, income, prices, and the other factors.

Overall, the increases in demands forecast for forest and range products are well above the levels that can be met with present management programs and existing facilities.

2. The Nation has a huge forest and range land base.

In 1970, 1.6 billion acres, some 69 percent of the Nation's area, were classified as forest and range land. About two-thirds of this area was in rangeland and noncommercial forest. Another 31 percent—500 million acres—was commercial forestland capable of producing in excess of 20 cubic feet per acre of industrial wood a year in natural timber stands and not withdrawn for other uses. The remaining 3 percent—some 48 million acres—was classified as inland water.

ESTIMATED GROWTH IN DEMAND FOR FOREST AND RANGE LAND



This graph shows the expected growth in demand for certain forest and range land uses. Target years are shown as percentages of the base year (100 percent). For example, the demand for forest range grazing in 1970 was 213 million animal-unit months and is expected to increase to 117 percent by 1980 and to 164 percent by 2020.

3. Most of the forest and range land is in non-Federal ownership.

Some 99 percent of prairie grasslands, 94 percent of plains grasslands, and 84 percent of mountain grasslands are in non-Federal ownership, nearly all private. The shrub ecosystems, on the other hand, are largely on public lands. About 82 percent of the sagebrush land and 70 percent of desert shrub land are on Federal holdings.

About 73 percent of the Nation's commercial forestland is in private ownership.

4. Productivity of forest and range land is generally low.

It is estimated, for example, that nearly a quarter of the rangeland areas in the contiguous States is in the lowest productivity class, and another three-fifths is in the moderately low class. A large proportion of the lands in these lower classes is in National Forest and other Federal ownership. Nearly three-quarters of the rangeland was producing less than 60 percent of potential in 1970.

More than a quarter of the commercial forestland is in the lowest site productivity class—land capable of producing only 20 to 50 cubic feet of timber per acre per year in fully stocked natural timber stands. The potential yields indicated by site productivity classifications are generally not being realized.

5. Forest and range lands have the capacity to produce much more of nearly all products and services.

With additional investments in research, management programs, and physical facilities, the output of nearly all forest and range products and services can be greatly increased, and these higher levels of output can be sustained into the future.

For example:

- The 1.6 billion acres of forest and range land, and the associated inland water, have the physical capacity to supply sites for picnicking, camping, hiking, skiing, birdwatching, swimming, and most other types of outdoor recreation well in excess of expected increases in demand.
- Those same lands and waters have the capacity to support much larger numbers of most species of wildlife and fish.
- Forage production from range can be nearly tripled.
- Timber growth on commercial forest land can be more than doubled.

Chapter Three

THE FRAMEWORK FOR DECISION

A long-range program for forest and range resources encompasses so many diverse but interrelated activities for which the Forest Service is responsible that it was necessary, first, to devise an orderly framework for planning.

For this purpose the various planning concerns were grouped into six "Resource Systems," encompassing all the management activities of the Forest Service. Each of these Systems includes the various elements of the research and cooperative programs and administration of the National Forest System related to the particular activity. The six Systems are:

Outdoor Recreation and Wilderness
Wildlife and Fish Habitat
Range
Timber
Land and Water
Human and Community Development

Then, available data concerning the current and projected resource situation for each System was analyzed, using mainly the information in the Assessment.

The next step in the process was to formulate several broad alternative objectives, or "goals," of varying intensity for each of the six Systems.

With long-term general goals identified, specific targets were developed. The targets were the quantifiable outputs (the amounts of goods and services) necessary to meet each broad goal. Then, activities required to meet these targets were identified.

Finally, from the literally thousands of possible combinations of systems, goals, targets, and activities, eight Alternative Program Directions were constructed. The number might have been more, or less, but the study and review of about eight alternatives were needed in order to embrace a broad but reasonable range of program possibilities.

Each of the eight alternatives is made up of a selected goal from each resource system to form a total program and policy direction for the Forest Service. These eight Alternative Program Directions are summarized very briefly in Chapter 4.



There were four basic factors that influenced the final decision process: (1) economic effectivness; (2) environmental effects; (3) public comment; and (4) professional judgment.

Economic Effectiveness. Values for each benefit and cost were developed using procedures consistent with directions and guidelines issued by the Office of Management and Budget and the Water Resources Council. Both commodity and amenity values were given dollar estimates. Costs for all activities in each Alternative Program Direction were totaled, as were the estimated dollar values of benefits. Both costs and benefits were discounted at a prescribed interest rate. The discounted benefits minus costs then resulted in the "Present Net Worth"—an economic indicator useful for comparing alternatives.

Environmental Effects. Positive and negative effects were analyzed in relation to soils, water, vegetation, fish and wildlife, endangered species, wilderness resources, esthetics and social and economic results. The Recommended Program, reviewed in draft by the public, serves as an environmental impact statement and has been filed with the Council on Environmental Quality as required by the National Environmental Policy Act of 1969.

Public Comment. This vital aspect of the process took place in four major stages. A previously developed "Environmental Program for the Future" was provided for public review in 1974. The "Outline" of Forest Service plans for implementing RPA was unveiled in February 1975, as a means of determining if the approach was right. "Alternative Goals" for the six resource systems invited public response in March of the same year to see if the range of alternatives was reasonable. And finally, in August 1975, draft documents of the "Assessment" and "Program" were submitted to the public for critical appraisal.

Almost 4,000 documents and letters containing information and suggestions were received. This citizen response from every State in the Nation was buttressed by testimony from participants in 14 public hearings, hundreds of briefings, special workshops, and public meetings around the country.

Several patterns of public reaction took form in the evaluation process.

For example, the public was in general agreement on such suggestions as more dispersed recreation on National Forest lands with more developed recreation on private lands; research focused clearly on resource system goals; environmentally sound forest management; intensive timber production on the higher capability lands; improved wood utilization; increased resource production and reforestation on private lands; and meeting Federal standards of air and water quality. There was considerable public support for the high goals in all resource systems.

General conflict was expressed on such issues as wilderness, the methods and rate of timber harvesting on National Forests, and whether or not the Forest Service Program should have a Human and Community Development System.

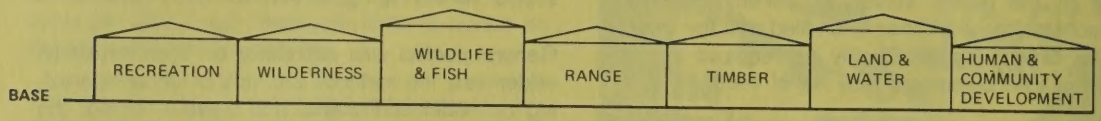
Considerable concern was expressed about the validity of such basic assumptions as projected population trends, economic growth, standards of living, energy, and minerals supply and demand projections.

Some expressed concern about how the national Recommended Program would be broken down by regions of the country, about extension of Federal controls at the expense of State and private rights, about possible overbuilding of roads, and about inadequacy of definition of the specific roles of Federal and State agencies in the program.

Professional Judgment. Uncertainty about the future, especially the more distant future, poses questions about all long-range planning. Yet natural resources planning must be long range because of the slow natural processes that are involved. Such planning is further handicapped by inadequate information about the natural resources themselves. Hence judgment, mainly judgment of knowledgeable professionals and scientists, had to be one of the key factors in choosing among the complex set of alternatives considered here.

Chapter Five

THE RECOMMENDED RENEWABLE RESOURCE PROGRAM



(Illustration of Program Direction by comparison to current trends or present levels.)

The Renewable Resource Program being recommended calls for intensification of efforts that will yield long-term benefits equal to or above investment costs. With some modifications, the goals included approximate the Alternative VI Program Direction described in Chapter 4. The Recommended Program especially focuses on three areas:

(1) Dispersed recreation opportunities would be emphasized, along with a moderate allocation of National Forest land to statutory wilderness designation.
(2) Timber and range activities would place priority on the most cost-effective resource management and investment opportunities on all lands.
(3) Efforts on behalf of wildlife and fish, land and water stewardship, and human and community development would be accelerated.

Following are descriptions of the goals, target activities, and expected results of the resource systems which make up the Recommended Program. Although each is discussed separately, it should be kept in mind that relationships among the systems are particularly important. Program costs for each system and the total costs for the Recommended Program are given in terms of 1975 constant dollars.

RECREATION

The goal for this system is to increase the supply of outdoor recreation opportunities and services through Forest Service programs which emphasize dispersed recreation.,

The National Forest System, with its large land base, proximity of some forests to population centers and many natural attractions, has one of the greatest potentials for providing additional relatively low-cost dispersed recreation opportunities. Because of this great potential, it is unique among Federal and State providers of recreation experiences.

In 1974, two-thirds of National Forest visitor use was for dispersed recreation (as opposed to "developed site" recreation). Public comment during the RPA planning process clearly favored dispersed recreation for National Forest lands, with preference that the private sector provide increased emphasis on developed recreational facilities. The recommended goal is also consistent with proposals made by the Outdoor Recreation Resources Review Commission, the Public Land Law Review Commission, and the Bureau of Outdoor Recreation.

Under this program, recreation use in National Forest dispersed areas would increase from 125.0 million recreation visitor days in 1975 to a range of 128.3 to 140.0 million in 1980 and 176 to 220 million annually during the decade 2011–2020.

National Forest land also provides major opportunities for moderately developed recreation, such as campgrounds and picnic areas. The Recommended Program would provide for continuation of the current Forest Service share of such developed recreation opportunities. In addition, capital intensive developments, such as ski and summer resorts, would

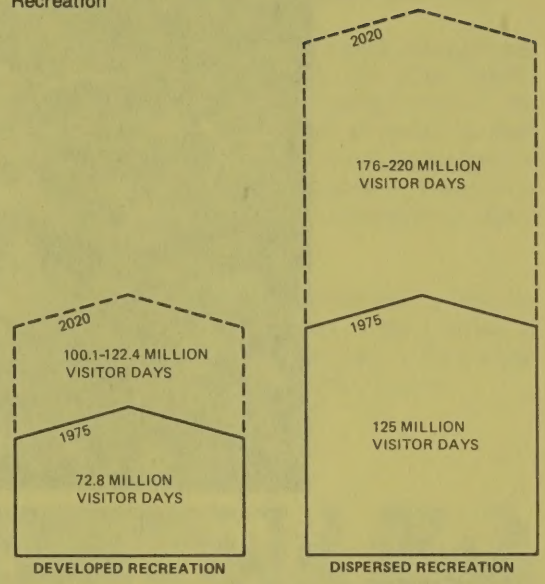
be encouraged where there is demand and interest in development by the private sector. Recreation use in National Forest developed sites would increase from 72.8 million recreation visitor days in 1975 to a range of 74.8 to 81 million in 1980 and 100.1 to 122.4 million annually in the decade 2011–2020.

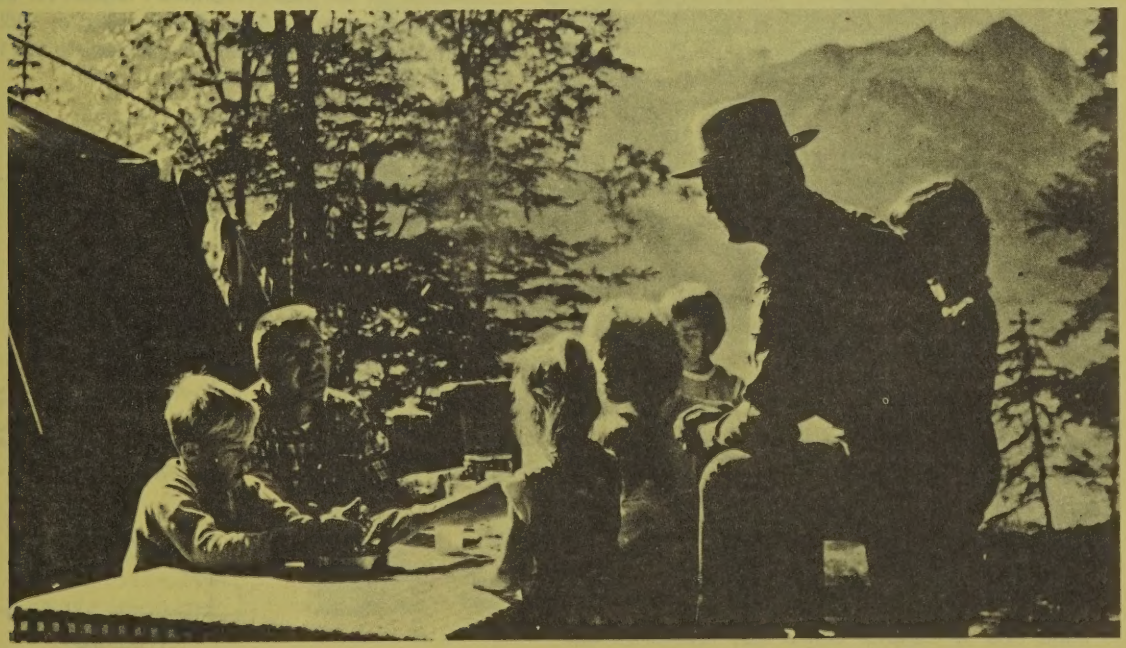
Assistance would be given private forest landowners who are interested in helping to provide public recreation opportunities. As the private sector moves more rapidly to accommodate additional recreational use, State and Private Forestry will assist States and private forest landowners as a part of its integrated multiple-resource assistance program provided through State Foresters, particularly in dispersed activities.

Research would strengthen technology and understanding of recreation demands, trends, values, and environmental impacts, as well as quantify and rank commodity and amenity values.

Total costs for the Recommended Program for the Recreation System would be $246.9 million in 1980, rising to $357.7 million annually in the decade 2011–20. Costs in 1975 were $65.8 million.

RECREATION
Emphasis on Dispersed Recreation





Public comment during the planning process clearly favored dispersed recreation for National Forest lands F.S.-518246



A moderate, but significant, increase in wilderness on National Forest land F.S.-505253

WILDERNESS

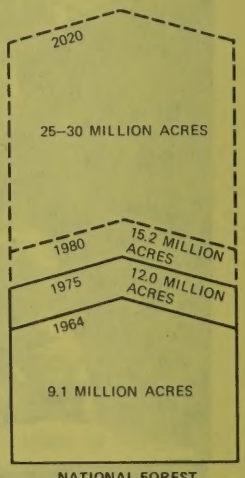
The program being recommended reflects Congressional direction and public desire that a substantial part of our natural land heritage be classified as wilderness for the enjoyment of present and future generations.

The Wilderness Act of 1964 designated 9.1 million acres of National Forest wilderness; additions have brought the present total to 12 million acres. Additional areas have been proposed which could raise the total National Forest wilderness acreage to 15.2 million acres. The Recommended Program for wilderness provides for a moderate, but significant, increase in wilderness on National Forest land. The National Forest wilderness acreage would remain nearly constant to 1980 at 15.2 million acres; then recommendations would be made to Congress to increase the acreage to 25–30 million by 2020. This allocation of land would assure a high-quality wilderness inventory.

Research would be expanded to clarify the role of natural and prescribed fire in wilderness and determine how to balance wilderness recreation use within the limits of nature preservation.

Total costs for the Recommended Program for the Wilderness System would be $12.8 million in 1980, rising to $31.7 million annually in the decade 2011–20. Costs in 1975 were $6.5 million.

WILDERNESS PROPOSALS
For The Future



WILDLIFE AND FISH

Uses of wildlife and fish, such as hunting and fishing, birdwatching, and photography, are increasing and will continue to do so.

The Recommended Program would provide for increased use and enjoyment of wildlife while increasing both the diversity and numbers of fauna and would assure the protection of threatened and endangered species. It would provide for greater species diversity and wildlife and fish populations through a substantial increase in habitat management.

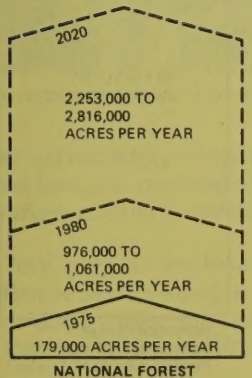
Research would emphasize habitat identification and improvement for endangered species and would study the impact of alternative forest and range practices on game and nongame habitats and populations.

On National Forest land, wildlife habitat improvement would increase from 175,000 acres in 1975 to a range of from 957,000 to 1,040,000 acres in 1980 and to 2,195,000 to 2,744,000 acres per year in the decade 2011–20. Fish habitat improvement would increase from 4,000 acres in 1975 to a range of from 19,000 to 21,000 acres in 1980 and from 58,000 to 72,000 acres annually in the decade 2011–2020.

Coordination of wildlife and fish habitat management activities of the Forest Service with other Federal and State agencies is an important part of the Recommended Program. Technical assistance and incentives would encourage nonindustrial private forest landowners to include habitat protection and development among their own management objectives.

Total costs for the Recommended Program for the Fish and Wildlife System would be $58.2 million in 1980 rising to $206.4 million annually in the decade 2011–20. Costs in 1975 were $16.5 million.

WILDLIFE AND FISH
Habitat Improvement



NATIONAL FOREST LAND



Increased use and enjoyment of wildlife while increasing diversity and numbers F.S.-522287

RANGE

In recent decades, there has been a growing dependence on feed concentrates for fattening livestock for market, but this situation is gradually changing.

Recent worldwide crop failures have greatly increased purchases of grain on the international market, and world grain stocks are less plentiful. Competition for grain has increased its price. Increases in the price and scarcity of fossil fuels, fertilizer, and labor have further escalated the cost of producing grains and forage from croplands.

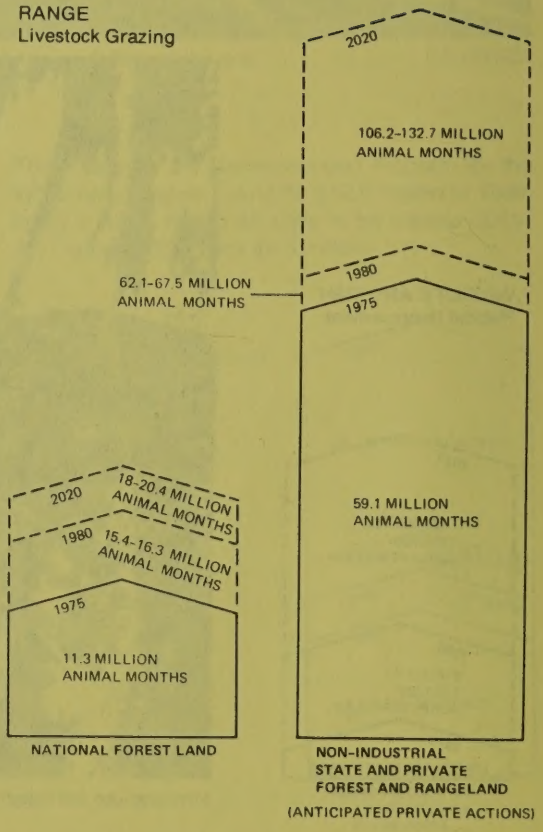
What this foretells is an increasing trend toward grass-fed cattle. Many animals are being held on the range longer before being fattened on feedlots for market to reduce costs of finishing cattle. This is increasing the use of range forage and is expected to continue.

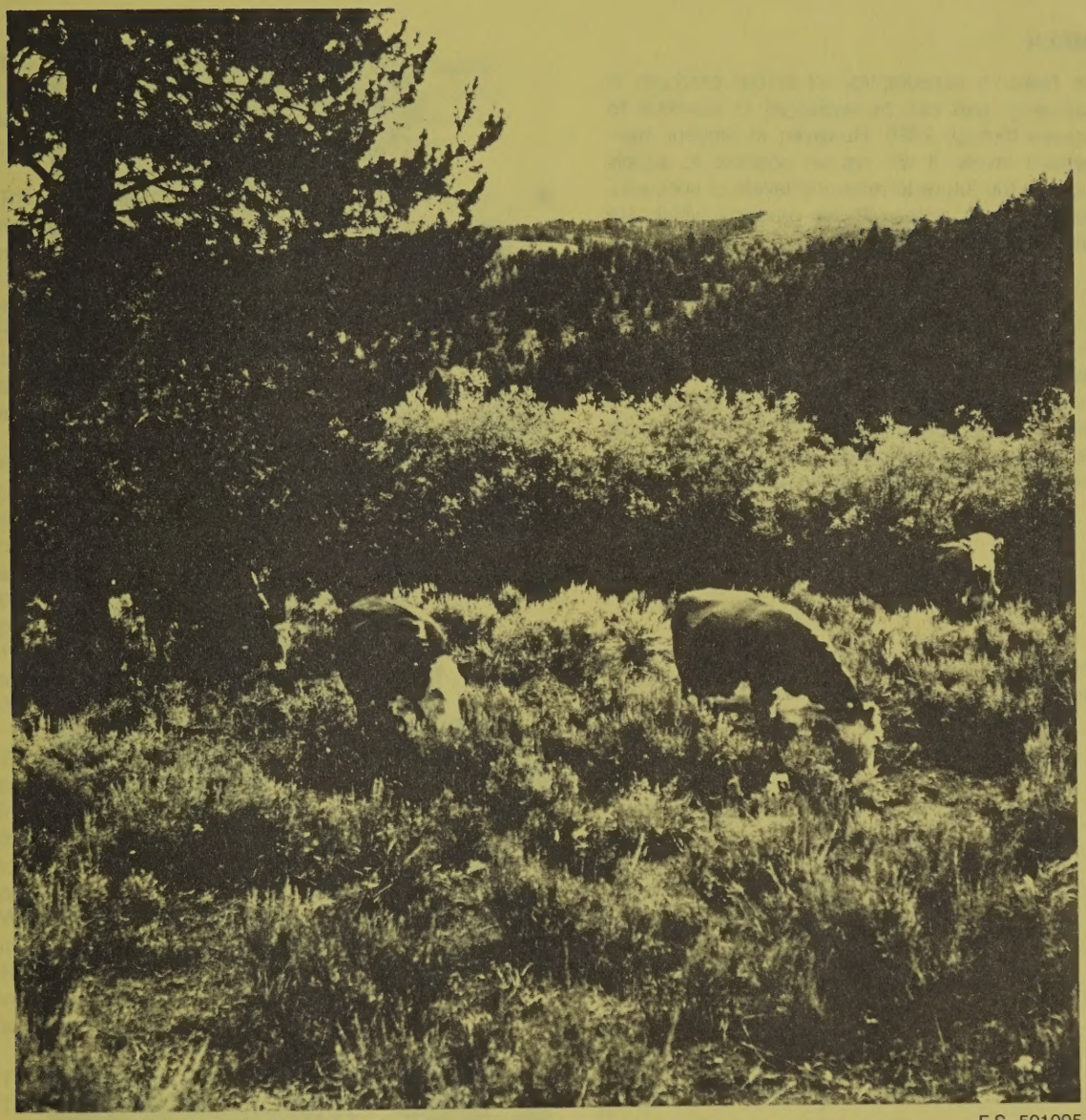
The Recommended Program would establish a steady course toward producing the larger amounts of forage from National Forest ranges and non-Federal forested ranges that are necessary to meet increasing demands for red meat. The program would also improve the efficiency of resource allocation and range condition for other values, such as watershed protection and wildlife. It would provide forage to the extent benefits are commensurate with costs without impairing land productivity.

Research would develop range management strategies to increase the production of red meat in ways that would reduce the impact of livestock grazing on other uses of range and forest land.

Livestock grazing on National Forest lands would increase from the current annual level of 11.3 million animal-unit-months (AUM's) to a range of from 15.4 to 16.3 million AUM's in 1980 and from 18.0 to 20.4 million AUM's in 2020. Cooperative efforts, involving other interested Federal, State, and local organizations would encourage private landowners to work toward producing the estimated 106.2 to 132.7 million animal-unit-months annually possible from non-Federal forested range in 2011–2020. This increase corresponds with the expected increase in demand for red meat over the same period.

The environmental focus of this goal has an important bearing on its recommendation. The correction





Livestock grazing on National Forest lands would increase

F.S.-501095

of unsatisfactory range conditions on National Forest land and improved grazing practices on forested ranges of other ownerships are key activities.

Total costs for the Recommended Program for the Range System would be $58.4 million in 1980, rising to $86.9 million annually in the decade 2011–20. Costs in 1975 were $21.7 million.

TIMBER

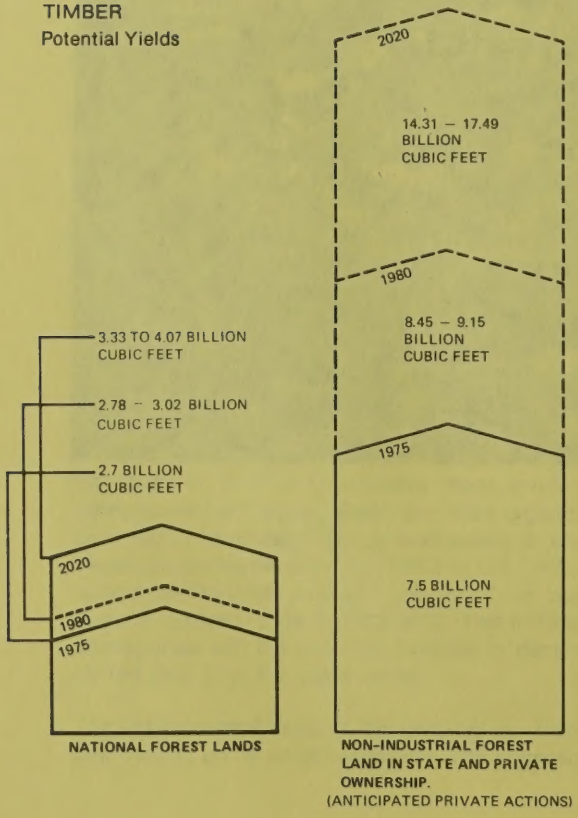
The Nation's consumption of timber products is increasing, and can be expected to continue to increase through 2020. However, at present management levels, it will not be possible to supply timber in the future to meet the levels of consumption at today's prices. Those products which are available will cost more.

On the positive side, there are numerous opportunities to increase timber supplies through research and improved protection and management practices. Major opportunities include better utilization of timber; improving the rates of timber growth and yield; improving the protection of forests from wildfire, insects, and diseases; and providing better inventory and evaluation of resources.



Improved protection and management practices

TIMBER
Potential Yields



This is why the goal for Timber in the Recommended Program is to increase supplies and quality to the point where benefits are commensurate with costs.

The recommended goal emphasizes efficient timber management. It suggests those capital investments needed to reap the greatest long-range returns. Concentrating investments on the most productive sites in the National Forest System would increase potential timber yields from 2.7 billion cubic feet in 1975 to a range of 2.8 to 3 billion cubic feet in 1980, and to a range of 3.3 to 4.1 billion cubic feet annually in the decade 2011–20.

But the greatest opportunity to increase timber supplies exists on the 59 percent of commercial forest land that is owned by farmers and other private nonindustrial landowners. The program proposes an emphasis on State and Private Forestry programs that would seek to increase private nonindustrial potential timber yields of 7.5 billion cubic feet in 1975 to 8.5 to 9.2 billion cubic feet in 1980, and 14.3 to 17.5 billion cubic feet annually in the decade 2011–20.

The program would provide incentives for private timberland owners to grow commercial timber, and incentives for improved use of the trees and logs that are harvested. It would decrease the risks of loss from major forest fires, insects, and diseases—particularly in the old-growth timber stands of the West. By the 1990's, it would eliminate the backlog in reforestation of more than 2 million acres of National Forest System land. It would tend to prevent a greater reliance on timber imports and substitute materials.

Total costs for the Recommended Program for the Timber System would be $940.8 million in 1980, rising to $1.2 billion annually in the decade 2011–20. Costs in 1975 were $587.2 million.

LAND AND WATER

The Land and Water System is an aggregation of the many basic stewardship activities that must be accomplished on all forest and related range lands to assure that the productivity and quality of the land, water, and ecosystems are kept intact and healthy. This System includes such things as land line location of property boundaries, restoration of disturbed or eroding watersheds, improvement of fire protection and removal of floatable debris blocking water courses or fish passage.

Many of these basic stewardship functions have been slighted or postponed on all land ownerships. Yet, they are essential to the maintenance of productive and healthy ecosystems.

F.S.-484834



Improvement of soil productivity, air and water quality

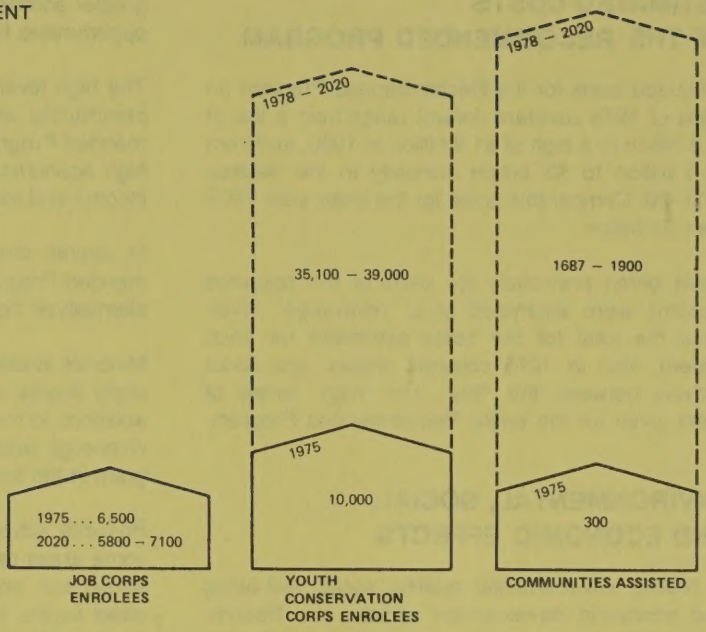
This is why a goal has been selected for the Land and Water System in the Recommended Program which would allow the Forest Service to move toward more fully redeeming its stewardship responsibilities. It would meet minimum air and water quality standards; give emphasis to improvement of soil productivity, air and water quality; while selectively improving, commensurate with benefits, water supply; and meet other land stewardship standards.

The Recommended Program would increase forest and range water yields and improve soil productivity where needed. It would permit control of man-caused erosion on National Forest lands which contribute to water pollution, and it would provide technical assistance and program support to control similar erosion on State and private lands. It would provide a more adequate level of fire protection on 993 million acres of forest and range land and seek to reduce the number of man-caused fires and acres burned.

Research would be strengthened to improve knowledge about air, soil, and water resources, as well as solutions to specific problems that obstruct the effective management of these resources on both Federal and non-Federal lands. Important areas of research would include the nature and extent of nonpoint sources of pollution generated by resource management; technologies to reclaim surface-mined areas; new and improved logging practices for fragile soils and steep slopes; and improved efficiency of fire prevention and firefighting operations.

The recommended goal has important impact on other Resource Systems in the Program. It would provide long-term support for the Timber and Range Systems through soil management, land and water rehabilitation, arterial road construction and maintenance, insect and disease and fire management, and fire and general purpose facilities construction and maintenance. The Wilderness and Recreation Systems would benefit from increased levels of land acquisition. Improved soil and water conditions and increased fire protection would enhance the Fish and Wildlife System.

Total costs for the Recommended Program for the Land and Water System would be $402.4 million in 1980, rising to $786.4 million annually in the decade 2011–20. Costs in 1975 were $323.3 million.



HUMAN AND COMMUNITY DEVELOPMENT

Through its many activities in rural communities across the Nation, the Forest Service has unique opportunities to help people and communities help themselves. Conservation work can help develop, manage, and protect the Nation's natural resources. The Human and Community Development System provides a focal point for the special efforts of the Forest Service in this connection, serving employment needs and other social ends through natural resource management activities.

The goal chosen would continue Forest Service involvement in this area, and even increase activities in some instances. The programs emphasized are those which are most closely related to natural resource management and development, including conservation education. As stated, it would provide greater emphasis on efforts that complement the activities in other Forest Service resource systems.

The Recommended Program would provide for expansion of the Youth Conservation Corps, increasing from 10,000 youth positions in 1975 to a range of from 35,100 to 39,000 between 1978 and 2020. Forest Service efforts in Job Corps, employment and other manpower programs would continue at present levels of involvement. Assistance to communities would increase from 300 in 1975 to between 1,824 and 1,900 in 1980, and that level of assistance would remain about the same to the year 2020. This assistance would include urban and community forestry and, possibly, rural community fire protection.

Research would be expanded to meet several important needs. Some of these would be the detection and suppression of large destructive fires; control techniques for insect or disease outbreaks where suburbs and wildlands intermingle; breeding hybrid trees and shrubs adapted to urban and harsh Great Plains environments; reducing housing and other wood product costs by the development of new kinds of timber products or recycling of salvageable wood materials; maintaining housing quality by protecting wood from decay and insects; and developing an understanding of urban recreation needs and preferences.

Total costs for the Recommended Program for the Human and Community Development System would be $110 million in 1980, rising to $116.4 million annually in the decade 2011–20. Costs in 1975 were $57.6 million.

ESTIMATED COSTS OF THE RECOMMENDED PROGRAM

Estimated costs for the Recommended Program (in terms of 1975 constant dollars) range from a low of $1.8 billion to a high of $1.9 billion in 1980, and from $2.5 billion to $3 billion annually in the decade 2011–20. Comparable costs for the index year 1975 were $1 billion.

Costs given previously for each of the resource systems were estimated at a "mid-range" level. Thus the total for the costs estimated for each system, also in 1975 constant dollars, are about midway between the "low" and "high" levels of costs given for the entire Recommended Program.

ENVIRONMENTAL, SOCIAL, AND ECONOMIC EFFECTS

In testing environmental quality, social well-being and economic development effects, the Recommended Program was found to offer significantly greater benefits than the present trend does.

Soil productivity, for example, would be protected to a higher degree because of increased emphasis on the Land and Water System, in conjunction with the shift of timber production away from fragile sites and with the moderate increase in wilderness acreage. These same elements of the Recommended Program would improve water quality generally. Esthetics would be favorably affected because of the required high levels of utilization, slash (logging debris) treatment, diversity of vegetation, and restoration of eroding land.

Smoke and dust resulting from increases in road construction, timber harvesting, prescribed burning, and slash treatment would cause some very slight adverse effects on air quality.

Social well-being would be greatly improved over present trends. This high favorable rating results from the Recommended Program's emphasis on dispersed recreation and relatively high availability of wood products, grass-fed red meat and wilderness.

Some dangers to archeological, cultural and historic sites are inherent in the Program, but special care would be taken to minimize them. These dangers would result from development activities providing greater access to some forest areas and increasing opportunities for vandalism.

The high level of employment and moderately high community stability resulting from the Recommended Program activity would give the Program a high economic development rating. Higher goals of income and income distribution would be served.

In overall direct economic benefits, the Recommended Program ranks higher than any of the eight alternatives from which it was drawn.

Minerals availability would be adversely affected to a slight degree in the long term, primarily because of additions to the Wilderness System. Moderate levels of energy would be required to implement the Program in the long run.

Possible adverse effects on timber production in some areas resulting from the dispersed recreation, wilderness, and wildlife goals would be more than offset by the emphasis on efficient timber management on State and Private forest lands.

CONCLUSION

Thus, demands for products and services from the Nation's forests and ranges will continue to grow to a point where the present levels of management will not suffice. The 1.6 billion acres of our forest and range land base have the capabilities of meeting the projected needs for products and services generated by increased population and economic factors. But action must begin quickly to match production with potential needs during the next 44 years. This action can be taken at reasonable cost, which will be offset considerably by the income more intensive management of these lands will generate.

The Forest Service can contribute strongly to a national program geared to increasing products and services by intensifying its program efforts so they will yield long-term benefits commensurate with investment costs. The Recommended Renewable Resource Program appears to offer the highest probability of meeting that end.

A Summary of a Renewable Resource Assessment and a Recommended Renewable Resource Program.

RECREATION AND WILDERNESS

Recreation

Goal A: Supply *lower than current* trend of outdoor recreation opportunities provided directly through Forest Service programs.

Goal B: Maintain *current trend* of supply and mix of outdoor recreation opportunities and services, provided through Forest Service programs.

Goal C: Increase supply of outdoor recreation opportunities and services through Forest Service programs that emphasize *dispersed* recreation.

Goal D: Increase supply of outdoor recreation facilities and services through Forest Service programs that emphasize *developed* recreation.

Goal E: Increase supply of outdoor recreation opportunities and services through Forest Service programs that will serve a *full range* of demands.

Wilderness

Goal A: Provide for *minor increase* in wilderness on National Forest land. Limit recommended increases to a few outstanding areas.

Goal B: Provide for a *moderate* increase in wilderness on National Forest land.

Goal C: Provide for a *large* increase in wilderness from National Forest land.

WILDLIFE AND FISH

Goal A: Provide for species diversity and wildlife and fish populations attainable at a *low level* of habitat management.

Goal B: Provide for species diversity and wildlife and fish populations that can be attained within the *historic trend* of habitat management.

Goal C: Provide for greater species diversity and wildlife and fish populations through *large increases* of habitat management.

RANGE

Goal A: Provide forage *within present capacity* of range without impairing land productivity.

Goal B: Provide forage at *present levels* without impairing land productivity.

Goal C: Provide forage to the *extent benefits are commensurate with costs*, without impairing land productivity.

Goal D: Provide *additional forage* to increase proportion of livestock feed from forest and range, without impairing land productivity.

TIMBER

Goal A: Provide a timber supply consistent with *lower than current* efforts in research, assistance, and management.

Goal B: Provide timber supplies consistent with *current* policies and recent trends in utilization, research, assistance, and management efforts.

Goal C: Increase timber supplies and quality to the point where *benefits are commensurate* with costs.

Goal D: Increase quantity and quality of timber supplies *to meet projected increase in demand* at stable relative prices.

LAND AND WATER

Goal A: Meet minimum air and water quality standards. *Maintain current* soil productivity and water supply, and meet other land stewardship standards.

Goal B: Meet minimum air and water quality standards. *Selectively improve*, commensurate with benefits produced, air quality, soil productivity, water quality and supply, and meet other land stewardship standards.

Goal C: Meet minimum air and water quality standards. *Emphasize improvement* of soil productivity, air and water quality, and water supply, meet or exceed other land stewardship standards.

HUMAN & COMMUNITY DEVELOPMENT

Goal A: *Reduce present levels* of involvement in human and community development efforts that complement the activities in other Forest Service resource systems.

Goal B: *Maintain present levels* of involvement in human and community development efforts that complement the activities in other Forest Service resource systems.

Goal C: *Emphasize involvement* in human and community development efforts that complement the activities in other Forest Service resource systems.

Appendix H

(This is a condensed summary of key primary outputs, inputs, costs, and personnel needs for fiscal years 1977–1980, and on an average annual basis for each following decade through the year 2020.)

Recommended Program Direction

	Recommended Program Range	System [1]	Unit of Measure	Index Year 1975	Outputs and Costs by Time Period							
					Annual				Average Annual [3]			
					1977	1978	1979	1980	1981–1990	1991–2000	2001–2010	2011–2020
Key Primary and Intermediate Outputs												
Recreation Use—Developed	High	R&W	Mil. RVD	72.8	76.3	73.3	79.9	81.0	88.1	97.4	108.1	122.4
	Low	R&W	Mil. RVD	—	73.3	73.5	73.8	74.8	79.7	84.6	90.2	100.1
Recreation Use—Dispersed	High	R&W	Mil. RVD	125.0	134.7	137.8	139.8	140.0	160.9	181.0	201.1	220.0
	Low	R&W	Mil. RVD	—	128.0	129.5	130.0	128.3	144.8	156.8	166.9	176.0
Wilderness—Maintained	High	R&W	Mil. Acres	12.0	15.2	15.2	15.2	15.2	23	25	30	30
	Low	R&W	Mil. Acres	—	15.2	15.2	15.2	15.2	21	23	25	25
Wildlife Habitat Improvement	High	W&F	Thous. Acres	175	500	667	834	1,040	1,455	1,850	2,297	2,744
	Low	W&F	Thous. Acres	—	475	627	776	957	1,310	1,609	1,906	2,195
Fish Habitat Improvement	High	W&F	Thous. Acres	4	13	15	18	21	35	50	61	72
	Low	W&F	Thous. Acres	—	12	14	17	19	32	44	51	58
Livestock Grazing—NFS	High	R	Mil. AUM's	11.3	11.4	12.9	14.6	16.3	18.9	20.4	20.4	20.4
	Low	R	Mil. AUM's	—	10.8	12.1	13.6	15.4 [4]	17.2	17.7	16.9	18.0
Livestock Grazing—S&PF	High	R	Mil. AUM's	59.1	60.1	61.5	63.0	67.5	89.0	132.7	132.7	132.7
	Low	R	Mil. AUM's	—	57.1	57.8	52.3	62.1	80.1	115.4	110.1	106.2
Potential Timber Yield—NFS	High	T	Bil. Cu. Ft.	2.7	2.75	2.88	2.91	3.02	3.26	3.53	3.82	4.07
	Low	T	Bil. Cu. Ft.	—	2.65	2.72	2.69	2.78	2.95	3.07	3.19	3.33
Timber Sale Offering—NFS [5]	High	T	Bil. Cu. Ft.	2.4	2.08	2.92	3.05	2.91	3.26	3.53	3.82	4.07
	Low	T	Bil. Cu. Ft.	—	2.08	2.76	2.83	2.69	2.95	3.07	3.19	3.33
Timber Util. Improv.—All Ownership	High	T	Pct. Increase	5	5.10	5.15	5.20	6.24	9.45	11.77	13.08	14.30
	Low	T	Pct. Increase	—	4.90	4.85	4.80	5.76	8.55	10.23	10.92	11.70
Potential Timber Yield—Non-industrial Private Lands	High	T	Bil. Cu. Ft.	7.5	7.7	8.5	8.8	9.15	11.45	13.70	15.91	17.49
	Low	T	Bil. Cu. Ft.	—	7.5	7.7	8.0	8.45	10.36	11.90	13.29	14.31
Water Quality (Min. Standards)	High	L&W	Thous. Ac. Ft.	1,373	1,402.5	1,419.3	1,436.2	1,440.4	1,512	1,549.4	1,578.3	1,592.8
	Low	L&W	Thous. Ac. Ft.	—	1,347.5	1,336.7	1,325.8	1,329.6	1,368	1,346.6	1,317.7	1,433.5
Fire Prevention—NFS	High	L&W	No. Man-Caused Fires	6,990	6,834	6,592	6,344	6,240	6,195	6,313	6,322	6,270
	Low	L&W	No. Man-Caused Fires	—	6,566	6,209	5,856	5,760	5,605	5,487	5,278	5,130
Fire Suppression—S&PF	High	L&W	No. Per Mil. Ac. Prot.	216	231	219	223	222	220	224	227	228
	Low	L&W	No. Per Mil. Ac. Prot.	—	221	209	205	204	200	194	189	186
Lands Acquired and Exchanged	High	L&W	Thous. Acres	—	126.5	121.0	244.4	304.2	423.2	506.1	101.4	113.3
	Low	L&W	Thous. Acres	—	121.5	114.0	225.6	208.8	382.8	439.9	84.6	102.0

Transportation System—Roads (appropriated funds)	High	All	Miles Constr.-Reconstr.	—	746	1,431	2,297	2,777	4,410	5,255	5,600	5,722
	Low	All	Miles Constr.-Reconstr.	—	716	1,347	2,197	2,563	3,990	4,567	4,726	4,682
Transportation System—Roads (timber purchaser)	High	All	Miles Constr.-Reconstr.	—	9,801	9,003	8,188	7,338	7,411	7,928	10,777	10,885
	Low	All	Miles Constr.-Reconstr.	—	9,417	8,479	5,558	6,774	6,705	6,890	8,997	8,906
Youth Conservation Corps	High	H&CD	Thous. Persons Involved	10.0	0	39.0	39.0	39.0	39.0	39.0	39.0	39.0
	Low	H&CD	Thous. Persons Involved	—	0	39.0	39.0	37.0	37.0	36.2	35.4	35.1
Community Improvement	High	H&CD	Comm. Assisted	300	0	1,900	1,900	1,900	1,900	1,900	1,900	1,900
	Low	H&CD	Comm. Assisted	—	0	1,687	1,976	1,824	1,805	1,767	1,729	1,710
Receipts to Treasury	High	All	Mil. Dol.	581.8	535.6	609.3	689.4	765.4	844.7	967	1,102.4	1,225.2
	Low	All	Mil. Dol.	—	514.6	573.9	636.4	706.6	764.3	840.3	920.4	1,002.4
Inputs and Costs [2]												
Personnel Requirements	High	All	Thous. Person/Years	—	45	50	54	58	55	56	62	66
	Low	All	Thous. Person/Years	—	44	48	50	54	50	50	64	57
Operational Costs	High	All	Mil. Dol.	—	645.8	971.2	1,046.3	1,082.4	1,264.7	1,494.1	1,668.6	1,806.2
	Low	All	Mil. Dol.	—	—	914.6	965.9	999.2	1,144.3	1,298.6	1,393.0	1,477.8
Capital Investments	High	All	Mil. Dol.	—	383.7	592.1	665.8	721.0	777.3	984.6	1,126.6	1,210.2
	Low	All	Mil. Dol.	—	—	557.7	614.6	665.6	703.3	855.8	940.6	990.2
Backlog	High	All	Mil. Dol.	—	30.3	54.7	73.9	99.2	98.2	100.8	0	0
	Low	All	Mil. Dol.	—	—	51.5	68.2	91.6	88.8	87.6	0	0
Total Costs [4]	High	All	Mil. Dol.	1,003.8	1,059.8	1,616.5	1,784.4	1,902.7	2,140.3	2,579.6	2,795.2	3,016.6
	Low	All	Mil. Dol.	—	—	1,522.3	1,647.2	1,756.3	1,936.5	2,242.0	2,333.6	2,468.2
National Forest System Costs	High	All	Mil. Dol.	—	924.8	1,342.6	1,513.3	1,617.5	1,802.6	2,176.3	2,326.0	2,488.9
	Low	All	Mil. Dol.	—	—	1,264.4	1,396.9	1,493.1	1,630.9	1,891.5	1,941.8	2,036.3
Research Costs	High	All	Mil. Dol.	—	85.0	117.2	121.8	116.1	135.1	152.5	168.7	183.2
	Low	All	Mil. Dol.	—	—	110.4	112.4	107.1	122.3	132.5	140.9	149.8
State and Private Forestry Costs	High	All	Mil. Dol.	—	50.0	156.7	149.5	169.0	202.1	250.8	300.5	344.4
	Low	All	Mil. Dol.	—	—	147.5	138.0	156.0	182.9	218.0	250.9	281.8

[1] R&W—Recreation and Wilderness System; W&F—Wildlife and Fish System; R—Range System; T—Timber System; L&W—Land and Water System; H&CD—Human and Community Development.

[2] Data may not add to totals because of rounding.

[3] Average annual outputs and inputs for the decade.

[4] Total Costs do not include the following Program Budget items: Payments to Bureau of Employment Compensation; Coop. Work (Trust Fund); ASCS Expenses (Alloc.); O&C Grant Land (Alloc.); and Federal Highway Administration Trust (Alloc.)

[5] Conversion rate for N.F.S. Timber Sale offerings is 5 Bd. Ft. per cubic foot. The output Timber Sale offerings for '77 is 10.4 Bil. Bd. Ft.

APPENDIX I

Statewide Planning Goals developed by the State of Oregon Land Conservation and Development Commission are listed below. Guidelines, or suggested directions, to implement the goals were also developed but are not shown here.

1. Citizen Involvement: To develop a citizen involvement program that insures the opportunity for citizens to be involved in all phases of the planning process.

The governing body charged with preparing and adopting a comprehensive plan shall adopt and publicize a program for citizen involvement that clearly defines the procedures by which the general public will be involved in the on-going land-use planning process.

The citizen involvement program shall be appropriate to the scale of the planning effort. The program shall provide for continuity of citizen participation and of information that enables citizens to identify and comprehend the issues.

Federal, state and regional agencies and special purpose districts shall coordinate their planning efforts with the affected governing bodies and make use of existing local citizen involvement program established by counties and cities.

The citizen involvement program shall incorporate the following components: 1) citizen involvement; 2) communication; 3) citizen influence; 4) technical information; 5) feedback mechanisms; 6) financial support.

2. Land Use Planning: Part I - Planning: to establish a land use planning process and policy framework as a basis for all decisions and actions related to use of land and to assure an adequate factual base for such decisions and actions.

City, county, state and federal agency and special district plans and actions related to land use shall be consistent with the comprehensive plans of cities and counties and regional plans adopted under ORS 197.705 through 197.795.

All land use plans shall include identification of issues and problems, inventories and other factual information for each applicable state-wide planning goal, evaluation of alternative courses of action and ultimate policy choices, taking into consideration social, economic, energy and environmental needs. The required information shall be contained in the plan document or in supporting documents. The plans, supporting documents and implementation ordinances shall be filed in a public office or other place easily accessible to the public. The plans shall be the basis for specific implementation measures. These measures shall be consistent with and adequate to carry out the plans. Each plan and related implementation measure shall be coordinated with the plans of affected governemtnal units.

All land use plans and implementation ordinances shall be adopted by the governing body after public hearing and shall be reviewed and, as needed, revised on a periodic cycle to take into account changing public policies and circumstances, in accord with a schedule set forth in the plan. Opportunities shall be provided for review and comment by citizens and affected governmental units during preparation, review and revision of plans and implementation ordinances.

Part II Exceptions: When, during the application of the statewide goals to plans, it apperars that it is not possible to apply the appropriate goal to specific properties or situations, then each proposed exception to a goal shall be set forth during the plan preparation phases and also specifically noted in the notices of public hearing. The notices of hearing shall summarize the issues in an understandable and meaningful manner.

If the exception to the goal is adopted, then the compelling reasons and facts for that conclusion shall be completely set forth in the plan and shall include: (a) Why these other uses should be provided for; (b) What alternative locations within the area could be used for the proposed uses; (c) What are the long term enviromental, economic, social and energy consequences to the locality, the region or the state from not applying the goal or permitting the alternative use; (d) A finding that the proposed uses will be compatible with other adjacent uses.

Part III - Use Of Guidelines: Governmental units shall review the guidelines set forth for the goals and either utilize the guidelines or develop alternative means that will achieve the goals. All land use plans shall state how the guidelines or alternative means utilized achieve the goals.

3. Agricultural Lands: To preserve and maintain agricultural lands. Agriculture lands shall be preserved and maintained for farm use, consistent with existing and future needs for agricultural products, forest and open space. These lands shall be inventoried and preserved by adopting exclusive farm use zones pursuant to ORS Chapter 215. Such minimum lot sizes as are utilized for any farm use zones shall be appropriate for the continuation of the existing commercial agricultrual enterprise within the area. Conversion of rural agricultrual land to urbanizable land shall be based upon consideration of the following factors: 1) environmental, energy, social and economic consequences; 2) demonstrated need consistent with LCDC goals; 3) unavailability of an alternative suitable location for the requested use; 4) compatibility of the proposed use with related agricultural land; and 5) the retention of Class I, II, III and IV soils in farm use. A governing body proposing to convert rural agricultural land to urbanizable land shall follow the procedures and requirements set forth in the Land Use Planning goal (Goal 2) for goal exceptions.

4. Forest Lands: To conserve forest lands for forest uses.

Forest land shall be retained for the production of wood fibre and other forest uses. Lands suitable for forest uses shall be inventoried and designated as forest lands. Existing forest land uses shall be protected unless proposed changes are in conformance with the comprehensive plan.

In the process of designating forest lands, comprehensive plans shall include the determination and mapping of forest site classes according to the United States Forest Service manual "Field Instructions for Integrated Forest Survey and Timber Management Inventories - Oregon, Washington and California, 1974."

5. Open Spaces, Scenic and Historic Areas, and Natural Resources: To conserve open space and protect natural and scenic resources.

Programs shall be provided that will: 1) insure open space, 2) protect scenic and historic areas and natural resources for future generations, and 3) promote healthy and visually attractive environments in harmony with the natural landscape character. The location, quality and quantity of the following resources shall be inventoried:

a. Land needed or desirable for open space;
b. Mineral and aggregate resources;
c. Energy sources;
d. Fish and wildlife areas and habitats;
e. Ecologically and scientifically significant natural areas, including desert areas;
f. Outstanding scenic views and sites;
g. Water areas, wetlands, watersheds and groundwater resources;
h. Wilderness areas;
i. Historic areas, sites, structures and objects;
j. Cultural areas;
k. Potential and approved Oregon recreation trails;
l. Potential and approved federal wild and scenic waterways and state scenic waterways.

Where no conflicting uses for such resources have been identified, such resources shall be managed so as to preserve their original character. Where conflicting uses have been identified the economic, social, environmental and energy consequences of the conflicting uses shall be determined and programs developed to achieve the goal.

6. Air, Water and Land Resources Quality: To maintian and improve the quality of the air, water and land resources of the state.

All waste and process discharges from future development, when combined with such discharges from existing developments shall not threaten to violate, or violate applicable state or federal environmental quality statutes, rules and standards. With respect to the air, water and land resources of the applicable air sheds and river basins described or included in state environmental quality statutes, rules, standards and implementation plan, such discharges shall not 1) exceed the carrying capacity of such resources, considering long range needs; 2) degrade such resources; or 3) threaten the availability of such resources.

7. Areas Subject to Natural Disasters and Hazards: To protect life and property from natural disasters and hazards.

Developments subject to damage or that could result in loss of life shall not be planned nor located in known areas of natural disasters and hazards without appropriate safeguards. Plans shall be based on an inventory of known areas of natural disaster and hazard.

8. Recreational Needs: To satisfy the recreational needs of the citizens of the state and visitors.

The requirements for meeting such needs, now and in the future shall be planned for by governmental agencies having responsibility for recreation areas, facilities and opportunities: 1) in coordination with private enterprise, 2) in appropriate proportions and 3) in such quantity, quality and location as in consistent with the availability of the resources to meet such requirements. State and Federal agency recreation plans shall be coordinated with local and regional recreational needs and plans.

9. Economy of the State: To diversify and improve the economy of the state.

Both state and federal economic plans and policies shall be coordinated by the state with local and regional needs. Plans and policies shall contribute to a stable and healthy economy in all regions of the state. Plans shall be based on inventories of areas suitable for increased economic growth and activity after taking into consideration the health of the current economic base; materials and energy availability; labor market factors; transportation; current market forces; availability of renewable and non-renewable resources; availability of land; and pollution control requirements.

Economic growth and activity in accordance with such plans shall be encouraged in areas that have underutilized human and natural resource capabilities and want increased growth and activity. Alternative sites suitable for economic growth and expansion shall be designated in such plans.

10. Housing: To provide for the housing needs of citizens of the state.

Buildable lands for residential use shall be inventoried and plans shall encourage the availability of adequate numbers of housing units at price ranges and rent levels which are commensurate with the financial capabilities of Oregon households and allow for flexibility of housing location, type and density.

11. Public Facilities and Services: To plan and develop a timely, orderly and efficient arrangement of public facilities and services to serve as a framework for urban and rural development.

Urban and rural development shall be guided and supported by types and levels of urban and rural public facilities and services appropriate for, but limited to the needs and requirements of the urban, urbanizable and rural areas to be served. A provision for key facilities shall be included in each plan. To meet current and long-range needs, a provision for solid waste disposal sites, including sites for inert waste, shall be included in each plan.

12. Transportation: to provide and encourage a safe, convenient and economic transportation system.

A transportation plan shall 1) consider all modes of transportation including mass transit, air, water, pipeline, rail, highway, bicycle and pedestrian; 2) be based upon an inventory of local, regional and state transporation needs; 3) consider the differences in social consequences that would result from utilizing differing combinations of transportation modes; 4) avoid principal reliance upon any one mode of transportation; 5) minimize adverse social, economic and environmental impacts and costs; 6) conserve energy; 7) meet the needs of the transportation services, 8) facilitate the flow of goods and services so as to strengthen the local and regional comprehensive land use plans. Each plan shall include a provision for transportation as a key facility.

13. Energy Conservation: to conserve energy.

Land and uses developed on the land shall be managed and controlled so as to maximize the conservation of all forms of energy, based upon sound economic principles.

14. Urbanization: To provide for an orderly and efficient transition from rural to urban land use.

Urban growth boundaries shall be established to identify and separate urbanizable land from rural land.

Establishment and change of the boundaries shall be based upon consideration of the following factors:

1) Demonstrated need to accommodate long-range urban population growth requirements consistent with LCDC goals;

2) Need for housing, employment opportunities, and livablilty;

3) Orderly and economic provision for public facilities and services;

4) Maximum efficiency of land uses within and on the fringe of the existing urban area;

5) Environmental, energy, economic and social consequences;

6) Retention of agricultural land as defined, with Class I being the highest priority for retention and Class VI the lowest priority; and,

7) Compatibility of the proposed urban uses with nearby agricultural activities.

The results of the above considerations shall be included in the comprehensive plan. In the case of a change of a boundary, a governing body proposing such change in the boundary separating urbanizable land from rural land, shall follow the procedures and requirements as set forth in the Land Use Planning goals (Goal 2) for goal exceptions.

Any urban growth boundary established prior to January 1, 1975 which includes rural lands that have not been built upon shall be reviewed by the governing body, utilizing the same factors applicable to the establishment or change of urban growth boundaries.

Establishment and change of the boundaries shall be a cooperative process between a city and the county or counties that surround it.

Land within the boundaries separating urbanizable land from rural land shall be considered available over time for urban uses. Conversion of urbanizable land to urban uses shall be based on consideration of:

1) Orderly, economic provision for public facilities and services;
2) Availability of sufficient land for the various uses to insure choices in the market place;
3) LCDC goals; and,
4) Encouragement of development within urban areas before conversion of urbanizable areas.

15. Willamette Greenway: to protect, conserve, enhance and maintain the natural, scenic, historical, agricultural, economic and recreation qualities of lands along the Willamette River as the Willamette River Greenway.

16. Estuarine Resources: to recognize and protect the unique environmental, economic and social values of each estuary and associated wetlands; and to protect, maintain, where appropriate develop, and where appropriate restore the long-term environmental, economic, and social values, diversity and benefits of Oregon's estuaries.

Comprehensive management programs to achieve the objectives shall be developed by appropriate local, state, and federal agencies for all estuaries.

To assure diversity among the estuaries of the State, by June 15, 1977, LCDC with the cooperation and participation of local governments, special districts, and state and federal agencies shall classify the Oregon estuaries to specify the most intensive level of development or alteration which may be allowed to occur within each estuary. After completion for all estuaries of the inventories and initial planning efforts, including identification of needs and potential conflicts among needs and goals and upon request of any coastal jurisdiction, the Commission will review the overall Oregon Estuary Classification.

Comprehensive plans and activities for each esturay shall provide for appropriate uses (including preservation) with as much diversity as is consistent with the overall Oregon Estuary Classification, as well as with the biological, economic, recreational, and aesthetic benefits of the estuary. Estuary plans and activities shall protect the estuarine ecosystem, including its natural biological productivity, habitat, diversity, unique features and water quality. Dredge, fill, or other reduction or degradation of these natural values by man shall be allowed only:

1) if required for navigation or other water-dependent uses that require an estuarine location; and
2) if a public need is demonstrated; and
3) if no alternative upland locations exist; and
4) if adverse impacts are minimized as much as feasible.

17. Coastal Shorelands: To conserve, protect, where appropriate develop and where appropriate restore the resources and benefits of all coastal shorelands, recognizing their value for protection and maintenance of water quality, fish and wildlife habitat, water-dependent uses, economic resources and recreation and aesthetics. The management of these shoreland areas shall be compatible with the characteristics of the adjacent coastal waters; and

To reduce the hazard to human life and property, and the adverse effects upon water quality and fish and wildlife habitat, resulting from the use and enjoyment of Oregon's coastal shorelands.

Programs to achieve these objectives shall be developed by local, state, and federal agencies having jurisdiction over coastal shorelands.

Land use plans, implementing actions and permit revies shall include consideration of the critical relationships between coastal shorelands and resources of coastal waters, and of the geologic and hydrologic hazards associated with coastal shorelands. Local, state and federal agencies shall within the limit of their authorities maintain the diverse environmental, economic, and social values of coastal shorelands and water quality in coastal waters. Within those limits, they shall also minimize man-induced sedimentation in estuaries, nearshore ocean waters, and coastal lakes.

18. Beaches and Dunes: To conserve, protect, where appropriate develop, and where appropriate restore the resources and benefits of coastal beach and dune areas; and

To reduce the hazard to human life and property from natural or man-induced actions associated with these areas.

Coastal comprehensive plans and implementing actions shall provide for diverse and appropriate use of beach and dune areas consistent with their ecological, recreational, aesthetic, water resource, and economic values, and consistent with natural limitations of beaches, dunes and dune vegetation for development.

19. Ocean Resources: To conserve the long-term values, benefits and natural resources of the nearshore ocean and the continental shelf.

All local, state, and federal plans, policies, projects, and activities which affect the territorial sea shall be developed, managed and conducted to maintain, and where appropriate, enhance and restore, the long-term benefits derived from the nearshore oceanic resources of Oregon. Since renewable ocean resources and uses, such as food production, water quality, navigation, recreation, and aesthetic enjoyment, will provide greater long-term benefits than will non-renewable resources, such plans and activities shall give clear priority to the proper management and protection of renewable resources.

APPENDIX J

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE

Siskiyou National Forest
P. O. Box 440, Grants Pass, OR 97526

2360
June 28, 1976

Mr. David G. Talbot
State Historic Preservation Officer
300 State Highway Building
Salem, OR 97310

Dear Mr. Talbot:

We need to know if you have any historic or prehistoric sites listed for the Chetco-Grayback Planning Unit in Southwestern Oregon. Please examine the enclosed map and respond by marking the appropriate box(es) below, signing and returning this form and map to us.

Thank you.

James E. Stichter
Cultural Resource Coordinator
Chetco-Grayback Planning Unit
Siskiyou National Forest

Enclosure: Project Map

For SHPO Use Only:

A check of our files on July 26 (date) shows the following for project area:

Data:

X No (or incomplete) records for that area. See "Recommendations".

____ No known sites in the project area. See "Recommendations".

____ Historic/Architectural sites exist in the project area. See enclosed list and map.

6200-11 (1/69)

____ Aboriginal/archaeological sites exist in the project area. see enclosed list and map.

____ Sites eligible for or included on the National Register of Historic Places exist in or adjacent to the project area. See enclosed list and map.

Recommendations:

_X_ Further investigation to locate/evaluate sites is recommended for the project area.

____ No further investigation is recommended at this time.

____ Contact for further information: _____

_____

_____

Comments:

Sites have been "unofficially reported for this area. No professional surveys of cultural resources have been carried out however. Since the area is virtually unknown archeologically, all sites would be important.

Edward T. Long
(name)
for State Historic Preservation Officer
State of OREGON

STATE OF CALIFORNIA—THE RESOURCES AGENCY EDMUND G. BROWN JR., Gover

DEPARTMENT OF PARKS AND RECREATION
P.O. BOX 2390
SACRAMENTO 95811
(916) 445-8006

March 1, 1977

Mr. James E. Stichter
Cultural Resource Coordinator
U. S. Forest Service
Siskiyou National Forest
P. O. Box 440
Grants Pass, OR 97526

Dear Mr. Stichter:

We have received your letter regarding the Chetco-Grayback Planning Unit which has a portion located in Northern California. As staff for the State Historic Preservation Officer, we have determined that there are no State Historic Landmarks, State Points of Historical Interest, or sites on the National Register of Historic Places in the immediate area of the proposed project.

Although there are no registered State or Federal historical sites, you should be aware that unrecorded historic values may exist. We suggest that consideration be given to identifying and safeguarding any potential historical and architectural resources which may not be presently recorded on our landmark registers. In this regard you may wish to contact the Del Norte County Historical Society, 710 H Street, Crescent City, California 95531.

We have no records of historic or prehistoric sites within the boundary of the proposed planning unit's northern California portion. However, a preliminary archeological field reconnaissance should be conducted. A professional archeologist should also be consulted if any artifacts are discovered. For implementation regarding archeological site records, you should contact Dr. David A. Fredrickson, California State College, Sonoma, Rohnert Park, California 94928, telephone number (707) 664-2381.

In compliance with Executive Order 11593, "Federal Agencies must submit proposals for the transfer, sale, demolition, or substantial alteration of federally-owned property eligible for inclusion in the National Register to the Advisory Council for review and comment." Procedures for compliance with this Executive Order are outlined in the February 19, 1974 issue of the Federal Register.

Please feel free to contact us should you require additional assistance.

Sincerely,

Knox Mellon

Dr. Knox Mellon
Historic Preservation Coordinator

F-2/2

cc: Dr. David A. Fredrickson
California State College, Sonoma
Rohnert Park, CA 94928

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE
SISKIYOU NATIONAL FOREST
Post Office Box 440
Grants Pass, Oregon 97526

IN REPLY REFER TO
2360
August 9, 1978

Mr. David G. Talbot
State Historic Preservation Officer
300 State Highway Building
Salem, OR 97310

Dear Mr. Talbot:

We are preparing the Chetco-Grayback Land Management Plan on the Siskiyou National Forest. We need to update our listings of the historic or prehistoric sites. Please examine the enclosed map and respond by marking the appropriate box(s) below, sign and return this form to us.

Sincerely,

James E. Stichter

JAMES E. STICHTER
Cultural Resource Coordinator

Enclosures

For SHPO Use Only:

A check of our files on 30 August (date) shows the following for your project area:

Data:

✓ No (or incomplete) records for that area. See "Recommendations".

_____ No known sites in the project area. See recommendations".

_____ Historic/Architectural sites exist in the project area. See enclosed list and map.

Comments: No additional prehistoric or historic sites have been recorded since previous request for information on 28 June 1976.

David G. Talbot
State Historic Preservation Officer, State of Oregon

CHETCO-GRAYBACK PLANNING UNIT

FOREST SERVICE DETERMINATION OF EFFECT

The proposed project described in the accompanying text and graphic material has been measured against the "criteria of effect" listed in 36 CFR 800.8 and 800.9 to determine the nature of effect, if any, upon properties determined eligible for or included on the National Register of Historic Places.

[X] We have determined that the proposed project will have "no effect" on any listed or eligible cultural resources. We will retain documentation of this determination and proceed with project implementation as proposed if you do not respond within 10 days.

[ ] We have determined that the proposed project will have "no adverse effect" on any listed or eligible cultural resources. We will document this determination to the Advisory Council on Historic Preservation and proceed with project implementation as proposed if you do not respond within 10 days.

[ ] We have determined that the proposed project will have "adverse effect" on cultural resource(s) listed on or eligible for the National Register of Historic Places. A description of each affected resource, and a plan to mitigate anticipated adverse effects are attached. Please advise us of your opinion within 10 days so that we may proceed with development of a preliminary case report.

Attachments:

- X Project description
- ___ Description of listed or eligible properties
- ___ Plan for mitigating adverse effects
- X SHPO Letter
- X Map and Proposed Historical Section for Chetco-Grayback Draft

FOREST SERVICE

by James F. Lawrence

title Acting Regional Forester

date June 14, 1977

SHPO use:

✓ concur

___ do not concur

(see enclosure)

SHPO

by David G. Talbot

title State Historic Preservation Officer

date June 22, 1977

APPENDIX K

ANALYSIS OF THE PUBLIC RESPONSE TO THE SIX ALTERNATIVES PRESENTED IN THE "ALTERNATIVES BROCHURE" ON THE CHETCO-GRAYBACK PLANNING UNIT

Definitions Used in the Analysis

1. Preference Groups:
   a) Preservation-Oriented - A respondent who prefers Alternative A.
   b) Development-Oriented - A respondent who prefers Alternative F most.
   c) Compromise-Oriented and Others - A respondent who prefers one or more of Alternatives B, C, D, or E most. A respondent expressing an opinion or respondent offering his/her own alternative.

2. Type of Input:
   a) Form letter - A formally drawn-up request addressed to the Siskiyou National Forest soliciting consideration of an alternative.
   b) Personal Letter - A letter by an individual, organization, or agency.

3. Who Responded:
   a) Individual - A person.
   b) Public agency - Any official local, State or Federal government body.
   c) Private Organization - Any nongovernment body of citizens, companies, groups, etc.

4. Residence of Respondent: (mutually exclusive)
   a) Local - Respondent resides within approximately 30 air-miles of the Planning Unit perimeter. Includes the following cities and towns: Gold beach; Brookings; Smith River; Cave Junction; Crescent City; Grants Pass; and other places within the area.
   b) Urban - Respondent resides within an Oregon city with a population of at least 10,000 or respondent resides within 5 air-miles of the perimeters of these cities.
   c) Rural - Respondent resides within Oregon and in areas not within the definition of either "Local" or "Urban".
   d) Outside Oregon - Respondent resides outside Oregon except for those in Smith River and Crescent City, California is in the "local" area.
   e) Not Given

RESPONSE BY ALTERNATIVE

Public Opinion of Alternative A presented in the Alternatives Brochure

Reasons Given in Support of Opinions Expressed

	# of Times Suggested
Need Balanced allocation of resources under Multiple use concept (wildlife, water quality, fish habitat).	9
Study Area is predominantly critical soil, low timber volume and poor growing potential	15
We support the proposed Hoover Gulch RNA	5
Protect future resources	9
Cost of Timber Management out weighs benefits	7
Has unique geologic history, diversity of plant life, micro-climate, and soil types	7
Study Area before land use decision	3
Year around recreation and location will protect area from over use.	1
Inadequate attention to Watershed Management and recreational values around Oregon Caves	1
Backcountry is to valuable as watershed to allow anything but recreation	3
No mention of threatened and endangered species	1
Alternative has merit, flexibility and open mindedness	1
Miners have already damaged Kalmiopsis	1
Too few wilderness areas in Oregon	4
False economy to accept a certain amount of damage to land	1
Need be no conflict between producing timber and preserving land	2
High quality of solitude offered by Kalmiopsis area	1
Fear that all lands put in Coordinated Resource Management will be cut	3

Modifications Proposed by "A" Proponents:

	# of Times Suggested
Area south of Kalmiopsis should be Study Area as the Backcountry in Alternative 'E', add Fall Creek, and Lightning Creek to Backcountry	3
Area studied as one unit	13
Close Chetco Pass to off-road-vehicles	11
Fisheries protection for Dunn Creek and East Fork Illinois River	20
Allocate old-growth units (specifically Squaw Mountain and Hope 80-01 and 80-02)	10
Mt. Emily should be Wilderness Study	9
Watershed protection area east of present Wilderness and north to Squaw Mountain	9
Lookout Mountain should be Wilderness Study	7
Add Fall Creek to Wilderness Study	6
Include alternative based on natural state	6
Buckskin sale should be rehabilitated	7
Need more watershed protection on rivers, streams, and gullies	4
Add West Fork Illinois to Wilderness Study	1
Upper Illinois should have no further roading	4
No herbicide spraying within Illinois River watershed	3
Rehabilitate Eagle Mountain Area and include as Wilderness Study	6
Timber should be removed from allowable cut in Backcountry Areas	1
Squaw Mountain should be included as Wilderness	4
Eliminate Mt. Emily from Alternative A	2
Include headwaters of Fiddler Gulch as Roadless Area	1
Include Snow Camp Area as Wilderness Study	1
Backcountry is Roadless Management	1
Buckskin Peak Road used as access corridor to Wilderness	2
Roadless Backcountry designation for Emily Creek	1

Roadless Backcountry designation for Lightning Creek	1
Planning should reflect Josephine County planning for Takilma Area	1
Protect South Kalm Area from off-road vehicles traffic	2
Move gate from Babyfoot to Onion Camp	2
Khoery Creek as Class II	1

Public Opinion response from Alternatives Brochure B - E

Alt.	Reasons Given in Support of Opinions Expressed	# of Times Suggested
Other	Transportation planning should be done on all drainages before entry	5
Other	Should complete Wilderness Study of South Kalmiopsis Roadless Areas before decision is reached.	1
Other	Growing potential and low existing volume in area east of Kalmiopsis	2
B	Not using timber now will assure us of timber later on	1
B	Timber volume low and 75% of soil to critical for logging	1
B	The mining areas are not that big	1
E	This type development recognizes productivity,topog., geological features, botanical values and habitat.	1
E	Area south of Kalmiopsis interesting but does not represent wilderness experience	1
E	Retains a large acreage for dispersed recreation	1
E	We are strongly opposed to any expansion of Wilderness Area	1
E	Support areas that do not "Lock-up" timber production and provide primitive access roads	1
D	No Roads in Windy Valley	1
D	Where roads are developed trails should be maintained through or around those areas.	1
Other	Lumbering should utilize shelterwood and selective recutting	2
Other	Small percentage of population will use and enjoy wilderness	1
Other	Keep most of the forestland available for M.U.M.	1
Other	Need little or no additions to wilderness	1
Other	Can not ignore mineral value that maybe locked up	1
Other	Economy should not be curtailed by reserving large areas of timber for use by a small percent of the people	1
Other	Wildland finest left today	1
Other	Leave options open for decision in the future	1

Other	Timber cutting and road building are nearly irreversable commitments	1
Other	Wilderness Study should not take more than two years	1
B	Wilderness boundaries should be on natural boundaries	1
B	Craggie Fork (Blueslide) Area will help Big Craggies with the Kalmiopsis	1
C	Hold mining off until there is a greater need to do so	1
C	Proper logging practices whould create little problem	1

Modifications Proposed by B - E and Other Proponents:

Include Illinois River and all drainages as protective watershed	7
Allocate old-growth management areas (particularly Squaw Mtn. area south to area east of Kalmiopsis)	6
Area east of Kalmiopsis to Squaw Mountain as watershed protection	4
Squaw Mountain Roadless Area designated Backcountry or Wilderness	4
Poorly stocked stand should be placed in marginal category with no cutting units until feasible	2
Roads and logging not compatable with Backcountry designation	1
Support Hoover Gulch R.N.A.	1
Possible Roadless Areas at N. Pistol River, E. Fork Pistol River and E. Fork Winchuck River	1
Eagle Mountain area should be in Wilderness Study	1

Public Opinion of Alternative F Presented in the Alternatives Brochure

Reasons Given in Support of Opinions Expressed:

Full play of Multiple-use concepts	636
Preservation of our timber base	164
Jobs will be lost and economic base destroyed	35
Land placed in Wilderness serves small majority	22
Oppose any classification that would hamper exploration development, and mining	57
Wilderness Study Area (3900 acres) is logical addition with logical boundary	4

U.S. has few domestic sources of the stratgic minerals chrome nickel and cobalt (Dependand on foreign countries)	9
Dependance on Forest Service timber will increase	4
Demand for wood products and minerals will increase	227
Do not want to reduce allowable cut	227
Consistent with initial management of National Forest System "greatest good for the greatest number of people"	6
Present policies adequately protects the resource	226
Adequate acreage has already been set aside for restricted status	64
Overripe timber should be harvested	2
Joespehine County has highest unemployment rate in Oregon	3
Wilderness and back-pack classification limits use and makes effective management impossible	2
Need more intense management area not restriction	2
Includes flexibility in future management of mineral, timber, fisheries and aesthetic resources	3
Adequate housing for the people of this nation is a basic need	1
Designation of an area greater than needed nullifies the maximization of the net public benefits	2
Available land for timber production, mining, and recreation should be increased not decreased.	2
There is a constant pressure to turn Curry County into a Federal Park	1
Area is not suited for wilderness	2
Mining in the area	1
Best interest for logging and lumbering industry	1
If public timber was managed more efficiently, these roadless areas would probably never be entered for cutting.	1
Harvest timber in orderly manner and block roads	1
Increasing need for wood products, minerals, and recreation make intensive management a necessity.	1
Once classed as wilderness it is impossible to mine	1

MODIFICATIONS PROPOSED BY F PROPONENTS

Eliminate Hoover Gulch Area	381
Oppose Windy Creek back country classification	1
Remove all backcountry areas from Alt. F	11
Adding 3900 acres is enough	1
Opposed to enlarging Kalm. Wild. area at all	1
Add Fall Creek Roadless Area	1
Add Area from mouth of Soldier Creek up stream in unit - water of unusual purity and clarity and is cold even in the summer	1
Lightning Creek should be available for more developed recreation needs and mining	1
Hoover Gulch should be used for research in management techniques not as control for research	1
Instead of Hoover Gulch study natural occurences in wilderness, wildrivers and other withdrawals	1

TABLE 1: Residence of Respondents by Interest Groups

Interest Groups	Local	Urban	Rural	Out of State	Not Given	Totals
Preservation-Oriented	38	24	4	47	5	118
Compromise-Oriented & Other	10	18	2	18	1	49
Development-Oriented	506	131	31	112	11	792
Totals	554	173	37	177	17	959

TABLE 2: Who Responded by Interest Groups

Interest Group	Individuals	Public Agencies	Private Organizations
Preservation-Oriented	106	2	10
Compromise-Oriented & Other	35	9	5
Development-Oriented	756	5	31
Totals	897	16	46

TABLE 3: Type of Input by Interest Group

Interest Group	Personnel Letters	Form Letters
Preservation-Oriented	85	33
Compromise-Oriented & Other	49	0
Development-Oriented	113	679
Totals	247	712

APPENDIX L

Description of RARE II Areas

176 North Kalmiopsis 113,632 Acres

The North Kalmiopsis area is located in Josephine and Curry Counties, Oregon. The area is drained by the Illinois River system. The terrain is rugged and generally forested. However, areas of rocky and shallow soil are not. Douglas-fir, sugar pine, tanoak and madrone are the principal tree species. Most of the streams are important for anadromous fish. Recreation use is concentrated along the Illinois River.

179 Squaw Mountain 8,064 Acres

The Squaw Mountain area is located in Josephine County, Oregon. Several small tributaries of the Illinois River drain the area. Topography is moderately rugged. Although much of the area is forested, stands typically are open. In addition, grassy barrens are scattered about the area and account for a large acreage on the serpentine soils in the eastern portion of this area. Average conifer timber volumes per acre are relatively low and the land's inherent productivity is also somewhat lower than the Forest average. Mineralized areas have attracted some prospecting activity. Recreation use is virtually nonexistent in the area. However, part of the area borders the more-heavily used Illinois River road. A variety of wildlife species utilizes the area, but population levels are generally low.

180 Windy Valley 13,491 Acres

The Windy VAlley area is located in Curry County. Of the 13,491 acres in the area, only 48 acres are privately-owned. The remainder are National Forest lands. The area drains into two watersheds - Pistol River and Chetco River. Topography is moderately rugged and the area is heavily forested. Douglas-fir is the primary conifer, although knobcone pine is abundant near Snow Camp Mountain. The primary hardwoods are tanoak and madrone. The land's inherent productivity is relatively high. Several miles of lower Mineral Creek are considered important for steelhead spawning and rearing. Several trails cross the area, but recreation use is centered about Windy Valley in the northern arm of the area. Horse riding, hiking, and motor biking account for the moderate level of dispersed recreation in this portion of the area. Although a variety of wildlife species uses the area, population levels are generally low. Windy Valley is the most prominent feature in the entire area.

183 Kalmiopsis Addition 1,178 Acres

The Kalmiopsis Addition is located in Curry County, Oregon. The area is on the western boundary of the Kalmiopsis Wilderness and is moderately rugged and heavily forested. Tanoak and madrone are the predominant hardwoods while Douglas-fir is the predominant conifer. The land's inherent productivity is relatively high. Recreation use is light. A variety of wildlife uses the area but population levels are generally low.

184 Mt. Emily 5,947 Acres

The Mt. Emily area is located in Curry County, Oregon. The area includes most of the Emily Creek drainage. Emily Creek, a tributary of Chetco River, is an important stream for anadromous fish. Topography is typically rugged and the area is heavily forested. The principal conifer species is Douglas-fir while tanoak and madrone are the principal hardwood species. The land's inherent productivity is high relative to the Forest average. Ridgetop roads surround the area but recreation use in the area is virtually non-existent. A variety of wildlife species utilizes the area but population levels are generally low. Mt. Emily is the most prominent point in the area.

701 Siskiyou 8,294 Acres

The Siskiyou area is located in Del Norte County, California. Part of the area is adjacent to large roadless areas on the Six Rivers and Klamath National Forest to the south. The area is part of the upper watershed of the East Fork Illinois River. The lower half mile of that stream in this area is considered important for steelhead spawning and rearing. Topography is rugged and elevations are relatively high with several peaks exceeding 6,000 feet. Except the creek bottoms and lower slopes, most of the area is poorly forested. Ridgetops are typically barren and alpine in character. Primary conifers include Douglas-fir, Shasta red fir, and white fir. Tanoak is a primary hardwood. Average conifer timber volume per acre and the land's inherent productivity are both low relative to Forest averages. Several old trails cross the area but recreation use is light. The adjacent Youngs Valley outside the area is accessed by road and is used by campers and hikers. The alpine character of the high country along the crest is generally considered attractive. Prominent peaks in the area include Youngs Peak, Polar Bear Mountain, Lookout Mountain, and Black Butte. A variety of wildlife species utilizes the area.

702 Indian Creek 950 Acres

The Indian Creek area is located on the state line in Josephine County, Oregon. It is part of a roadless area on the Klamath National Forest in Siskiyou County, California.

707 North Fork Smith 1,135 Acres

The North Fork Smith area is located on the Oregon-California line in Josephine and Del Norte counties. The Oregon portion is a very minor piece of the area which is primarily on the Six Rivers National Forest.

708 Packsaddle 9,315 Acres

The Packsaddle area is located on the Oregon-California line in Curry (Oregon) and Del Norte (California) Counties. Part of the area is on the Six Rivers National Forest. The area has rolling to broken topography with convex sideslopes. Vegetation is dense. Douglas-fir is the predominant species with interspersed redwoods in the creeks. The predominant hardwood species are tanoak, madrone and chinkapin. The lands inherent productivity is high for most of the area. A variety of wildlife species utilizes the area especially the black-tail deer.

709 South Kalmiopsis 111,315 Acres

The South Kalmiopsis area is located in Curry and Josephine Counties, Oregon. The area drains into the Smith, Illinois, South Fork Chetco, and Winchuck river systems. Topography is moderately rugged. The east portion is characterized by serpentine soils, broad rounded ridgetops, and steep sideslopes. Vegetation is sparse on these soils. Predominant conifers are white pine, knobcone pine, and Jeffrey pine. A large patch of granitic soils in the Buckskin Peak area is densely forested with Douglas-fir and sugar pine. Inherent productivity is low. Most of this area is highly mineralized. Large deposits of chromium and nickel are known to be in the area. Mineral exploration activities have created a large network of primitive, though substantial roads. Several old trails also cross the area. Recreation use is light-confined to off-road vehicles and a few hikers. The lower end of both the North and South Fork of Rough and Ready Creek and a mile of Whiskey Creek are considered important steelhead streams. The serpentine areas are biologic deserts for many wildlife species, however, a larger variety of wildlife species frequent the granitic islands. The west portion has rolling to broken and steep terrain. Generally the area lies within the marine sediments which are associated with the higher productive soils on the forest. Vegetation is dominated by Douglas-fir and tanoak. Roads form irregular peninsula-shaped boundaries around much of the area. A large variety of wildlife species inhabits this area. The South Fork Chetco and Winchuck are important salmon and steelhead streams.

Table R-3. Siskiyou National Forest RARE II Wilderness Attribute Ratings.

Area	Naturalness 1/	Apparent Naturalness 2/	Adjusted Naturalness 3/	Adjusted Apparent Naturalness 3/	Solitude 4/	Oppor-tunities for Primitive Recreation 5/	Supple-mentary Attributes 6/	Scenic Values 7/
No. Kalmiopsis 6176	High	Moderate	Outstanding	Outstanding	Very high	Very high	Infrequent	Significant
Squaw Mtn 6179	Very high	High	No deletions	No deletions	Moderate	Moderate	Infrequent	Infrequent
Windy Valley 6180	Very high	Very high	No deletions	No deletions	Moderate	Moderate	Infrequent	Significant
Kalmiopsis Add 6183	Outstanding	Outstanding	No deletions	No deletions	High	High	Insignificant	Significant
Mt. Emily 6184	Very high	High	No deletions	No deletions	Moderate	Moderate	Infrequent	Significant
Siskiyou 6701	Outstanding	Very high	No deletions	No deletions	Very high	Very high	Significant	Outstanding
Indian Creek 6702	Outstanding	Moderate	No deletions	No deletions	Moderate	Moderate	Significant	Outstanding
No. Fork Smith 6707	Very high	High	No deletions	No deletions	Moderate	Moderate	Infrequent	Significant
Packsaddle 6708	Very high	High	No deletions	No deletions	High	Moderate	Infrequent	Significant
So. Kalmiopsis 6709	High	Moderate	Very high	Very high	High	High	Infrequent	Significant

1/ How natural does the area appear to a technically trained individual. Possible ratings are: Outstanding, very high, high, moderate, low, very low, none.

2/ How apparently natural does the area look to the untrained casual visitor. Possible ratings are: Outstanding, very high, high, moderate, low, very low, none.

3/ Same as 1/ and 2/ except with some highly impacted areas deleted.

4/ The "chance to get away from it all". Possible ratings are: Outstanding, very high, high, moderate, low, very low, none.

5/ The opportunity for challenge. Possible ratings are: Outstanding, very high, high, moderate, low, very low none.

6/ Summation of cultural features, special ecological features, the presence of threatened and endangered species of plants and animals, and scenic values. Possible ratings are: Unique, outstanding, significant, infrequent, insignificant.

7/ Scenic values along. Possible ratings are: Unique, outstanding, significant, infrequent, insignificant.

LIST OF ROADLESS AREAS RECOMMENDED FOR INCLUSION IN RARE II
SISKIYOU NATIONAL FOREST (6-12-78)

AREA NO.	NAME	GROSS	PVT	NET	JOSEPHINE COUNTY	CURRY COUNTY	COOS COUNTY	DEL NORTE COUNTY	COMM. FOREST LAND
171	COPPER MTN	10,884	0	10,884	0	10,278	606	0	5,732
172	MULE CREEK	250	0	250	0	120	130	0	186
173	ROGUE	7,100	356	6,744	0	6,710	390	0	6,392
174	POTATO MTN	8,115	35	8,080	0	8,115	0	0	7,066
175	SHASTA COSTA	16,312	0	16,312	0	16,312	0	0	12,648
176	NO. KALMIOPSIS	113,632	224	113,408	61,773	51,859	0	0	82,651
177	QUOSATANA	5,524	10	5,514	0	5,524	0	0	4,281
178	BRIGGS	5,762	0	5,762	5,762	0	0	0	3,900
179	SQUAW MTN	8,064	0	8,064	8,064	0	0	0	5,625
180	WINDY VALLEY	13,491	0	13,491	0	13,491	0	0	8,595
183	KALMIOPSIS ADD.	1,178	0	1,178	0	1,178	0	0	646
184	MT. EMILY	5,947	0	5,947	0	5,947	0	0	3,358
701	SISKIYOU	8,294	0	8,294	0	0	0	8,294	6,094
702	INDIAN CREEK	950	0	950	950	0	0	0	724
703	KANGAROO	14,192	0	14,192	14,192	0	0	0	11,528
707	NO. FORK SMITH	1,135	0	1,135	0	1,135	0	0	968
708	PACKSADDLE	9,315	0	9,315	0	9,315	0	0	6,041
709	SO. KALMIOPSIS	111,315	702	110,613	63,678	47,637	0	0	52,485
	TOTALS	341,460	1,327	340,133	154,419	177,621	1,126	8,294	218,920
	PVT ACRES COUNTY				783	526	18	0	
	NET ACRES COUNTY				153,636	177,095	1,108	8,294	

Siskiyou National Forest (Gross) 1,162,951 Acres
(Net) 1,090,499 Acres

Kalmiopsis Wilderness (FS) 179,900 Acres
Wild Rogue Wilderness (FS) 27,200 Acres
TOTAL 207,100 Acres
Wild Rogue Wilderness (BLM) 8,700 Acres

OREGON

AREA CODE	AREA NAME	HAMMOND LANDFORM	WILDERNESS ATTRIBUTE RATING	WILDERNESS ASSOC. WILDLIFE SPECIES	BAILEY - KUCHLER ECOSYSTEM	CURRENTLY UNDER SPECIAL CLASSIFICATION	ALL GROWING STOCK (HARD AND SOFT WOOD)	ALL PRODUCTS PROGRAMMED HARVEST (HARD AND SOFT WOOD)	SITE PRODUCTIVITY	ANIMAL USE MONTHS (ALL)	RECREATION		PRODUCING PROVEN AND POSSIBLE (HIGH) MINERALS					
											DISPERSED MOTORIZED	DISPERSED NON-MOTORIZED	CRITICAL	NON-CRITICAL	OIL/GAS	GEOTHERMAL	URANIUM	COAL
NO	NAME	NO	4-28	NO	NO	ACRES	MMBF		CF/AC/YR	MAUM	MRVD	MRVD	Y = YES N = NO					
SISKIYOU N.F.																		
06171	COPPER MOUNTAIN	604	19	6	M2410 2	0	132.0	1.7	134	.0	.0	.8	Y	Y	N	N	N	Y
06172	MULE CREEK	604	20	6	M2410 2	0	5.2	.1	97	.0	.0	.1	N	N	N	N	N	N
06173	ROGUE	604	13	7	M2410 2	752	162.0	2.1	134	.0	.0	.6	Y	Y	N	N	N	N
06174	POTATO MOUNTAIN	604	18	8	M2410 2	1203	148.0	1.9	121	.1	.0	.8	Y	Y	N	N	N	N
06175	SHASTA COSTA	604	21	7	M2410 2	30	280.4	3.6	121	.0	.0	1.6	N	N	N	N	N	N
06176	NORTH KALMIOPSIS	604	21	7	M2410 2	0	1566.0	20.1	112	.0	.0	1.4	Y	N	N	N	N	N
06177	QUOSATANA	604	19	8	M2410 25	150	85.7	1.1	121	.0	.0	.5	N	N	N	N	N	N
06178	BRIGGS	602	15	10	M2410 2	0	62.3	.8	86	.0	.0	.2	Y	Y	N	N	N	N
06179	SQUAW MOUNTAIN	602	19	12	M2410 2	0	62.3	.8	64	.0	.0	.6	Y	Y	N	N	N	N
06180	WINDY VALLEY	604	20	7	M2410 25	0	93.5	1.2	121	.0	.0	.4	Y	Y	N	N	N	N
					M2410 2	0	85.7	1.1	121	.0	.0	.4	Y	Y	N	N	N	N
06183	KALMIOPSIS ADDITIONS	684	24	7	M2410 25	0	.0	.1	97	.0	.0	.1	Y	N	N	N	N	N
06184	MT EMILY	604	19	7	M2410 25	0	62.3	.8	121	.0	.0	.4	N	N	N	N	N	N
06701	SISKIYOU	602	25	6	M2410 2		116.9	1.5	109	.1	.0	.7	Y	Y	N	N	N	N
06702	INDIAN CREEK	602	19	9	M2410 2	0	15.6	.2	97	.1	.0	.1	Y	Y	N	N	N	N
06703	KANGAROO	604	21	7	M2410 2	0	241.5	3.1	121	.3	.2	1.1	Y	Y	N	N	N	N
06707	NORTH FORK SMITH	602	19	1	M2410 5	0	7.8	.2	64	.0	.0	.1	Y	N	N	N	N	N
06708	PACKSADDLE	604	20	6	M2410 25	0	85.7	1.1	121	.1	.0	.5	Y	N	N	N	N	N
06709	SOUTH KALMIOPSIS	602	19	7	M2410 25	0	251.0	3.2	93	.0	.0	5.5	Y	Y	N	N	N	N
					M2410 5	0	483.0	6.2	64	.0	.0	1.0	Y	Y	N	N	N	N

Revised chart from RARE II Draft Environmental Statement Supplement, 1978

APPENDIX M

Land Capability and Suitability for Resource Uses

The 464,712 acres of National Forest in the Chetco-Grayback Planning Unit were divided into 32 separate groups. These groups, or Resource Analysis Unit's (RAU's), are relatively homogenous with respect to physical characteristics and inherent productivities. Component land areas of each RAU are intermingled with other RAU components. There are more than 2,346 components, hence the average number of components per RAU is 73. The average size of components varies widely but averages about 200 acres.

Each RAU is evaluated in terms of capability and suitability. As used here, capability refers to the inherent productivity of the land to produce goods or services. (Management technicques may be required to reach this full potential, however, these techniques must stop short of artifically altering the resource. Hence, precommercial thinning helps insure attainment of inherent timber-growing capability; fertilization, in contrast, may result in a higher artificially-created capability.) Capabilities for producing ten outputs are estimated for each RAU in the table below.

Suitability, as used here, answers the question "should output X be produced on this land?" To answer the question, value judgements must be imposed over capability estimates. Although these value determinations are most appropriately made when evaluating a set of land management alternatives, there are several well-established standards which can be used for suitability analysis. By resource output, these are:

1. Timber - Commercial forestlands must be capable of growing 20 cubic feet of useable wood fiber per acre per year. Lands with lower capabilities are not suitable for timber production. In this Unit, most of the 137,147 acres in RAU's 81 and 82 are not suited for timber production due to low productivity. In addition, some other RAU's are poorly suited to intensive timber management, being capable of producing more than 20 cubic feet per acre per year but considerably less then 50 cubic feet per acre per year. The unsuitable and poorly suitable lands are often found together in a complex mosaic. Existing inventory information does not permit an accurate mapping of the separate categories.

2. Developed Site Recreation - Although many of the serpentine lands (RAU's 81 and 82) have average slopes less than 30%, the usual harsh environment and sparse vegetative cover make these lands largely unsuitable for campground or picnicground recreation.

3. Wilderness - In accordance with provisions of Public Law 88-577, the Wilderness Act, only land which "...generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable..." will be considered for Wilderness.

Virtually the entire Unit is suitable, to some extent, for the production of the other inputs listed in the output capabilities table.

ESTIMATED OUTPUT CAPABILITIES 2/

1/ RAU	Timber (MBF)	Developed Site Recreation (Visitor-Days)	Dispersed Recreation (Roads) (Visitor-Days)	Dispersed Recreation (Trails) (Visitor-Days)	Wilderness Recreation (Visitor-Days)	3/ Sediment (Cubic Yards)	3/ Water (Acre-Feet)	Per Acre: Black-Tailed Deer (Deer)	Per Acre: Pileated Woodpecker (Pairs)	Per Acre: Yellowed Bellied Sapsucker (Pairs)
111	.722	1.02	1.12	.31	.31	.072	4.71	.025	.007	.20
112	.722	4/	1.12	.31	.31	.239	5.15	.025	.007	.20
113	.663	4/	1.12	.31	.31	.779	5.58	.024	.007	.20
121	.722	1.02	1.12	.31	.31	.073	4.78	.025	.007	.20
122	.663	4/	1.12	.31	.31	.244	5.25	.024	.007	.20
123	.614	4/	1.12	.31	.31	.816	5.85	.023	.007	.20
211	.663	1.02	1.12	.31	.31	.068	5.80	.024	.007	.20
212	.614	4/	1.12	.31	.31	.224	6.33	.023	.007	.20
213	.565	4/	1.12	.31	.31	.726	6.87	.022	.007	.20
221	.614	1.02	1.12	.31	.31	.069	5.87	.023	.007	.20
222	.504	4/	1.12	.31	.31	.228	6.47	.022	.007	.20
223	.409	4/	1.12	.31	.31	.762	7.20	.020	.007	.20
311	.614	1.02	1.12	.31	.31	.019	3.87	.025	.007	.20
312	.565	4/	1.12	.31	.31	.065	4.29	.024	.007	.20
313	.455	4/	1.12	.31	.31	.231	5.08	.023	.007	.20
321	.565	1.02	1.12	.31	.31	.020	3.96	.023	.007	.20
322	.504	4/	1.12	.31	.31	.066	4.37	.022	.007	.20
323	.409	4/	1.12	.31	.31	.240	5.29	.021	.007	.20
411	.565	1.02	1.12	.31	.31	.071	6.13	.022	.007	.20
412	.504	4/	1.12	.31	.31	.222	6.80	.022	.007	.20
413	.455	4/	1.12	.31	.31	.847	8.00	.021	.007	.20
421	.409	1.02	1.12	.31	.31	.073	6.20	.020	.007	.20
422	.321	4/	1.12	.31	.31	.242	6.87	.018	.007	.20
423	.207	4/	1.12	.31	.31	.883	8.33	.015	.007	.20
511	.455	1.02	1.12	.31	.31	.011	3.75	.021	.007	.20
512	.362	4/	1.12	.31	.31	.038	4.17	.018	.007	.20
513	.282	4/	1.12	.31	.31	.136	4.92	.017	.007	.20
521	.409	1.02	1.12	.31	.31	.012	3.83	.020	.007	.20
522	.282	4/	1.12	.31	.31	.039	4.25	.017	.007	.20
523	.207	4/	1.12	.31	.31	.142	5.13	.015	.007	.20
81	.078	1.02 4/	1.12	.31	.31	.215	7.12	.011	.003	.10
82	.060	1.02 4/	1.12	.31	.31	.215	7.12	.010	.003	.10

1/ Resource Analysis Unit (RAU) code:
   a. First number indicates soil-geology type.
      1 = Schists
      2 = Deep Sediments
      3 = Metavolcanics and Metasediments
      4 = Shallow Sediments
      5 = East Side Igneous
      8 = Serpentine
   b. Second number indicates aspect.
      1 = North, Northwest, Northeast, East
      2 = South, Southwest, Southeast, West
   c. Third number indicates average slope
      1 = 0-30%
      2 = 31-60%
      3 = 61%+

2/ Capability in terms of units per acre per year (e.g., for timber, MBF/Acre/Year).

3/ Average output minimums at natural rate.

4/ RAU's with average slopes exceeding 30% are not capable of providing satisfactory campground or picnicground recreation.

APPENDIX N

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APPENDIX O

Glossary of Terms

Aboriginal - The original human inhabitants of the area; i.e., the Indians.

Acre Foot - The volume of liquid required to cover one acre to a depth of one foot.

Administrative Trails - Trail constructed with primary purpose for use in fire control, grazing regulation, timber cruising or road and land survey.

Aeolian - Wind deposited; carried or produced by wind.

Aerial Systems - Logging methods which can lift logs to a landing area and support them free of the ground enroute. Some of the currently operational methods include: Helicopters, balloons and certain skyline cable systems. Areas suggested for aerial systems are those not directly accessible by road or where road construction would cause adverse environmental impacts.

A.E. - (Animal Equivalent) an index to the number of animals that can be supported for a given time on a unit of land of specified vegetation. For example, one deer would require 20 acres of old growth Douglas-fir for one year.

Animal Unit Month (AUM) - An animal unit is considered to be one thousand pounds of live weight or a cow and calf. The quantity of forage consumed by the cow and her calf in one month is an animal-unit-month of other classes of livestock to an AUM.

Aggregate - A mineral such as sand, gravel or stone, used to make concrete.

Allocation Type - The mix of management activities which can occur on the same piece of land.

Allowable Cut - The calculation, by volume of board feet of timber, of the timber than can be harvested annually in accordance with prescribed management objectives.

Alternative - The different means by which objectives can be attained. They need not be obvious substitutes for one another or perform the same specific function.

Amenity - An object, feature, quality or experience that gives pleasure or is pleasing to the mind or senses.

Anadromous Fish - Species which migrate from the ocean and up river and streams of their place of birth to spawn, e.g., salmon, steelhead.

Andesite - A fine-grained volcanic rock composed essentially of plagioclase feldspars and ferro-magnesian minerals.

Anticline - A fold that is convex upward; upbound strata.

Aquifer - The zone below the earth's surface capable of producing water as from a well.

Area Guide - A coordinated direction for those Forests sharing common issues, objectives and management directions.

Aspect - The direction toward which a slope faces, i.e. North, East, etc.

A.T.V. - All terrain vehicle (see ORV).

Aquatic Habitat - The environment of plants and animals growing or living in or upon the water.

Background - The distance part of a landscape, picture, etc.; surroundings, especially those behind something and providing harmony or contrast; surrounding area or surface. Area located from 3-5 miles to infinity from the viewer.

Basalt - An extrusive rock of volcanic origin; fine grained, dark colored.

Big Game - Large animals hunted for sport, e.g. elk, deer, bear and cougar.

Biological Potential - An expression of the potential timber producing capacity of all commercial forest lands on the Siskiyou National Forest with the exception of existing Research Natural Areas and Wilderness Areas.

Biome - A major biotic unit consisting of plant and animal communities having similarities in form and environmental conditions.

Biotic - Of living organisms in their ecological rather than their physiological relations.

Board Foot - The amount of timber equivalent to a piece one foot by one foot by one inch thick.

Broadcast Burning - A controlled burn of unpiled slash over a designated area.

Buffer Zone - A managed strip of varying size and shape for maintaining or enhancing aesthetic values along roads, trails or water and around recreation sites.

Capability (Land) - Ability of the land to produce organic materials. Usually related to soil and moisture characteristics.

Carrying Capacity - Ecological The number of weight of organisms that can survive without causing deterioration of the ecosystem.

Characteristic Landscape - The naturally established landscape within a scene or scenes being viewed.

Cirque - A steep, bowl shape excavation in a mountain, made by glacial action, erosion, etc.

Clearcutting - A method of timber harvesting in which all trees, merchantable or unmerchantable, are cut from an area. Regeneration results in an even-aged stand.

Climax Forest - A community that represents the culminating stage of a natural forest succession for its locality or environment.

Commercial Forest (or Timber) Land (CFL) - Forest land which is producing or capable of producing crops of industrial wood at the rate of 20 cubic feet per acre per year and has not been reserved or deferred.

Commodities - Products produced from a parcel of land (i.e., outputs of wood, recreation, wildlife, etc.).

Consumptive Use - Resource use that results in consumption or removal of that resource from its location. Timber harvest, cutting Christmas trees, municipal water, successful hunting and fishing are examples of consumptive use.

Cubic Foot - The amount of timber equivalent to a piece one foot by one foot by one foot thick.

Cull Material - Any item of production, e.g., trees, logs, lumber rejected because it does not contain usable material or falls below certain minimum standards.

Cultural Treatment - Activities designed to modify vegetation for a desired objective. Activities include thinning, genetics, fertilization, etc.

Declining Flow - A timber yield which in future decades can be less than in the first decade of calculation.

Deferred Forest Land - Productive forest land that has been administratively identified for study as possible additions to the Wilderness System or other withdrawal from timber utilization under authority granted in the Federal Code of Regulations.

Demand - The amount of goods or service that will be consumed if offered at a given price at a particular point in time.

Dendritic Drainag Pattern - A system of rivers where the tributaries have irregular branching characteristics joining the main stream at all angles.

Dense Cover - Vegetation of sufficient density to hide at least 90% of a mature elk at 150 feet.

Developed Recreation - Concentrated public use on a developed site which is a relatively small, distinctly defined protion of the National Forest used for the traditional recreation purposes such as camping, picnicking, downhill skiing, etc.

Dispersed Recreation - Recreation use outside of a developed recreation site, ranging from scenic driving to backpacking.

Dominant Overstory - Generally a species of the upper layer of the canopy that exerts the greatest influence on the character of the community because of its life-form or abundance.

Dwarf Mistletoe - A parasitic plant that grows on conifers, deforming and weakening trees.

Ecosystem - The interrelationships of living organisms with each other within their environment.

Ecotone - The transition zone between two adjoining plant communities.

Endangered Species - An endangered species or subspecies is one whose prospects of survival and reproduction are in immediate jeopardy. Its peril may result from one or many causes--loss of habitat or change in habitat, overexploitation, predation, competition, disease. An endangered species must have help, or extinction will probably follow. Found on U.S. Department of the Interior list and published in the Federal Register.

Environment - The sum of all external conditions and influences affecting the life, development, and survival of an organism.

Esthetics (Aesthetics) - Generally the study, science or philosophy dealing with beauty and with judgments concerning beauty; giving visual pleasure; the theory of perception or of susceptibility.

ET Rate - (Evapo-Transpiration rate) - The conversion of water, whether open or as soil moisture or with plants into water vapor that is released to the atmosphere.

Eutrophication - The process of a body of water becoming richer in dissolved nutrients.

Even Flow - Maintaining a relatively constant supply of timber from decade to decade.

Foreground - The detailed landscape found within 0 to 1/4-1/2 mile from the observer. Where details of texture, pattern and vegetation can be observed.

Forest Coordinating Requirements - Management objectives and policies that establish the relationship to be maintained between resources, uses, activities, or ecological systems.

Forest Receipts - Income received by the Forest from sale and use of Forest products including timber, grazing, Christmas trees, minerals, recreation and summer home permits.

Fuel Hazard - A supply of fuel that forms a special threat of ignition or suppression difficulty.

Fuels - Include both living plant and dead woody unvegetative materials.

Geomorphic - Pertaining to the figure of the earth or the form of its surface; resembling the earth.

Geothermal Energy - Useful energy that can be extracted from naturally occurring steam, hot water, or rocks found in the earth's volcanic and young orogenic zones.

Goal - A statement of desire about the end to be achieved by a management practice.

Goods (Commodities) - Tangible products produced from a parcel of land that can be measured, i.e., wood, water, livestock.

Grade - The rise or fall of the ground surface of the line of a road, ditch or other linear construction expressed in one unit vertical to so many units horizontal.

Group Selection System - A tree management system where trees are periodically removed in small groups here and there from an area. Regeneration is mainly natural.

Grooved Till Plane - An area of moraine or glacial till which has been covered with an ice sheet resulting in a surface with groves lying in the direction of the ice movement.

Habitat - The portion of the environment required for a plant or animal to maintain itself.

Helispot - This is an area that is provided for helicopter landing but has no on-the-ground access by roads. It requires a cleared area 50 feet in diameter and clear approaches at a 45 degree angle.

Hiding Cover - That density of vegetation which hides 90% of an animal within 200 feet. Optimum size hiding cover is four to eight sight distances wide.

High-Lead (Cable) Logging - A method of powered cable logging in which the main-line blocks are hung high on the spar tree to enable the front end of the logs to be lifted clear of the ground as they are transferred to the log deck.

Intermediate Cut - Any removal of trees from a stand between the time of its formation and the harvest cutting; generally includes clearing, thinning.

Lakes - Bodies of standing water of considerable size, surrounded by land.

Land Capability - A measure of the capability of the land to produce goods and services without imposed restraints such as lack of manpower and finances of other priority uses and without damage to the land.

Land Classification - A system of documented study to identify land that meets National Forest purposes, and to determine those lands that should be added to or deleted from the National Forest to achieve a land pattern that will maximize general public benefits.

Landscape Management Zone - A type of recreation zone in which the scenic resource is recognized as the primary value and there is need to design management practices to protect and/or enhance scenic values.

Landslide - Downward and outward movement of slope-forming materials, such as rock, soils, debris, artificial fills, or a combination of these materials.

Land Suitability - A measure of the suitability of land, as it exists in natural condition, for a single resource use or combination of uses.

Life Zone - A series of more or less distinct bands of plant and animal communities encountered when travelling from low elevation to high elevation.

Lode Claim - A mining claim--usually a deposit of valuable mineral between definite boundaries; a vein or fissure. A lode consists of several veins spaced closely enough so that all of them, with the interveining rock, can be mined as a unit.

Low Impact Roads - Roads having minimal impact on the environmnet.

LMP - Land Management Plan. A plan for managing the National Forest. The plan incorporates national guidelines and objectives, policies, and target outputs from area guides. It includes objectives and policies for specific planning units, and for special areas within planning units.

Management Alternative - The allocation types which are possible for a specific area.

Marginal Land - Commercial forest land that, because of economical, physical, or technological characteristics, is not presently feasible to manage for timber harvest, but which may become feasible in the near future.

Maximun Modification - Management activities may subordinate the original characteristic landscape. When viewed as foreground or middleground, the activity may not appear to borrow from natural factors. When viewed as background, it would appear as part of the overall natural composition.

Metallic - Of, or belonging to metals, particularly the valuable metals that are the object of mining.

Metastable - Stable with respect to small disturbances but capable to reaction if disturbed sufficiently.

Middleground - The space between the foreground and the background in a picture or landscape. The area located from 1/4-1/2 to 3-5 miles from the viewer.

Miocene - Geological age. The fourth of the five epochs within the Tertiary Period.

Modification of Character - Management activities may dominate the original characteristic landscape but must borrow from natural factors of form, line, color and texture so that the visual characteristics are those of similar natural landscapes. A natural appearing composition or design.

MMBF - Million Board Feet.

Moraine - Deposits caused by direct glacial action.

Motorized Travel - Travel requiring the use of powered vehicles including off-road vehicles such as snowmobiles, motorcycles, trail bikes, power boats and 4-wheel drive vehicles.

Non-Commercial Forest Land - Forest land that is incapable of producing crops of industrial wood at a rate of 20 cubic feet per acre per year or more.

Non-Declining Even Flow - Established periodic (10 year) potential yields no higher than can be maintained from one decade to the next. (See FSM 2410.3-2 Emergency Directive #16).

Objective - End result, goal or target; a future condition or result to be accomplished.

Oligocene - A geological age; the third of the epochs into which the Tertiary Period is divided.

ORV - Off-Road Vehicle - A vehicle capable of cross-country travel or travel on low-grade undeveloped roads and trails. For example, motor bikes, four-wheel drives, and snowmobiles. Include all-terrain vehicles (ATV's).

Output - The results of intensive management strategy that have been applied to the Planning Unit, stated in units per year.

Parent Material - The horizon of weathered rock from which the soil is formed.

Partial Retention of Character - A management activity may be evident and may visually change the essential quality of the existing landscape. However, these changes must be subordinate to the Visual strength of the characteristic landscape.

Perennial Plant - A plant that normally lives for three or more years.

Pesticide - Any chemical preparation used to control populations of injurious undesirable organisms; plant or animal.

Planning Area - The largest land use planning subdivison of the Forest Service. A specifically identified geographic area containing social and physical resources and land characteristics of a generally similar nature.

Planning Unit - A geographic area (including lands within and contiguous to a National Forest), characterized by a particular pattern of topography, climate and land use. Planning units are established to provide a focus for planning activities in a small enough area to be workable and a large enough area to enable the planners to envision or predict the cause-and-effect relationship of management alternatives.

Pleistocene - The geological epoch beginning approximately 1,000,000 years ago and ending 50,000 years ago. Characterized by the rise and recession of continental ice sheets and by the appearance of man.

Policies - Guidelines to achieve objectives.

Preattack Planning - A system for collecting, evaluating and recording fire intelligence data for a given planning unit, or preattack "block." The planning phase is usually followed by a construction and development program integrated with other management functions.

Prescribed Burning - Controlled application of fire to fuels in either their natural or modified state under such conditions of weather, fuel moisture and soil moisture as to allow the fire to be confined to a predetermined area and at the same time to produce the intensity of heat required to further contain planned objectives of silviculture, wildlife and forest hazard reduction.

Preservation of Character - Provides ecological change only. Used for wilderness of other similar special areas.

Pyroclastic - A term applied to volcanic material that has been explosively or aerially ejected from a volcanic vent.

Recreational - The level and type of recreation use that an area can provide without deterioration of the quality of the recreation experience or the resource from an area.

Recreation Visitor-Day - The presence of one or more persons engaged in recreational activity for continuous intermittent or simultaneous periods aggregating 12 hours.

Reforestation - Restocking an area with trees.

Regeneration - The renewal of a tree crop, whether by natural or artificial means.

Regeneration Harvest - Final harvest of a stand and preparation of the land for a new stand. It may take the form of clearcutting or shelterwood cutting.

Rehabilitation - The act of restoring a portion of forest land to its former state or capacity. This can be done by reshaping the land and/or planting grass or trees.

Research Natural Areas - Designated areas of land, usually over 300 acres in size, with characteristics of scientific or educational interest. They should represent as many as possible of the major, natural timber types or other plant communities in unmodified conditions.

Resource Allocation - The action of apportioning the supply of a resource to specific uses or to particular persons or organizations. For the purpose of this statement, resource allocation is synonymous with land use allocation.

Resource Capability System (RCS) - A computer-oriented analysis to assist in evaluating resource capabilities, limitations, and management alternatives of forest lands.

Retention of Character - A management activity would not change the essential quality of the existing dominance factors of form, line, color or texture.

RIM (Recreational Information Management) - A computer-oriented system for the management of recreation information about people, places and things over a period of time.

Riparian Vegetation - Plants occurring on or immediately adjacent to streams, lake or tidewater.

Risk - The opportunity for a fire to start, be it man-caused or from lightning.

Roadless Area - A generic term describing the unroaded nature or status of an area of land. Inventoried Roadless Areas are those areas identified in the Roadless Area Review and Evaluation (RARE) process, as well as those areas subsequently identified in the land management process.

Road Prism - Constitutes the total area of road excavation including the cut bank, the ditch, the road and the filled area below the road.

Rotation Age - The age of a tree at which it is harvested. It indicates the time required to produce the general size and character of the principal product desired.

Runoff - The total stream discharge, including both surface and subsurface flow, expressed in quantity over a specified time (thousand gallons per day, acre feet per year, etc.).

RVD - Recreation Visitor Days; see Visitor Day.

Salmonoid - A family sub-order of cold-water, fine-scaled fish including salmon and trout.

Scale - Generally a size relationship between an object and its environment or surroundings.

Scenic River Areas - Those rivers or sections of rivers that are free of impoundments, with shorelines or watersheds still largely primitive and shorelines largely undeveloped but accessible in places by roads.

Scribner Log Scaling Rule - A diagram rule, one of the oldest in existence. It assumes 1-inch boards and 1/4-inch saw kerf, and makes a liberal allowance for slabs and disregards taper. It is the official rule in many parts of the United States.

Second Growth - A relatively young stand of forest trees which may or may not be ready for commercial cutting. It may be either a stand of artificially reproduced or natural trees. It is younger than old-growth but older than reproduction.

Sedimentati - The deposition of suspended matter carried by water.

Sensitivity Level - A particular degree or measure of viewer interest in the scenic qualities of the landscape.

Sere - A stage of vegetation development in a plant successional series.

Services (Amenity Values) - An expression of intangible aspects of pleasantness or desirableness commonly associated with recreation, scenic and wildlife related experience.

Shelterwood Cutting - A form of regeneration harvest involving the removal of all trees on an area of land in appropriate successive stages designed to provide for natural and/or artificial regeneration and shelter of seedlings from climatic extremes.

Silviculture - The theory and practice of controlling the establishment, composition, competitive , and growth of forests.

Slash - The residue left on the ground after merchantable material has been removed. It includes unutilized logs, stumps, tops, limbs, twigs, leaves bark and chips.

Solid Waste - Debris and garbage generated by forest users.

Solitude - An experience where man may commune with his surroundings in a natural setting generally undisturbed by sound or sight of technology.

Special Areas - Special areas are zones or areas classified by Congress, Secretary, Chief or Regional Forester, such as Wilderness, Research, Natural, Scenic, Historic, Geologic and Archeologic.

Special Use Permit - A permit issued under established laws and regulations to an individual, organization or company for occupancy or use of National Forest land for some special purpose; e.g., organization camp, summer home, guide service, ski area, barn, corral, church, logging, camp, fish hatchery.

Streamside Management Unit (SMU) - The stream and an adjacent area of varying width where practices that might affect water quality,, fish, and other aquatic resources are modified, as necessary, to meet SMU goals for each class of stream.

The width of this area will vary with the management goals for each class of stream, characteristics of the stream and surrounding terrain and type and extent of the planned activity.

Streamflow - The discharge of water from a watershed that occurs in a natural stream channel.

Subgrade - That part of a road foundation consisting of the road bed only, excluding the base and surfacing material.

Succession - The gradual supplanting of one plant community by another.

Supply - The amount of goods or service that will be offered for sale at a given price at a particular point of time.

Sustained Yield - The achievement and maintenance in perpetuity of a high-level periodic output of the various renewable resources of the National Forest without impairment of the productivity of the land. Usually used in relation to timber yield.

Tarn - A small mountain lake or pool, especially one that occupies an ice-gouged basin on the floor of a cirque.

Thermal Cover - Thermal cover is provided by coniferous trees over 40 feet tall, with greater than 60 percent crown closure, less than 50 percent of the tree bole with crown, and a stand which permits air movement underneath the canopy. Optimum size elk thermal cover is 30 to 60 acres. Optimum size deer thermal cover is two to five acres, minimum width is 300 feet.

Thinning - Removal of trees to reduce stocking to a recommended level.

Threatened Species - A threatened species or subspecies is one that, although not presently threatened with extinction, is in such small numbers throughout its range that it may be endangered if its environment worsens. Close watch of its status is necessary.

Timber Resources Allocation Method (Timber RAM) - A computer based analytical approach designed to generate cutting schedules and yields for commercial Forest lands under multiple use management. These timber RAM plans can be used to evaluate current management policies and goals and to develop new ones.

Topograph - The configuration of the solid surface of the earth.

TM - Timber Management.

Total Resource Information (TRI) - A user-oriented system for storage and retrieval of information on resources of a specific land area. The concept is similar to traditional township, range, and section method of describing land area. The concept is similar to traditional township, range, and section method of describing land, except that TRI uses compartments and cells based on an aerial photographs.

Trailhead - A trailhead is where transfer from automobile travel to foot, horseback or bike takes place.

Transportation Network Analysis (TNA) - An analytical technique utilizing computer programs to manipulate transportation network inventories and to study the economic and operational efficiency of transport systems.

Trend Count - An inventory process taken over a series of years to determine changes in animal populations.

Type Conversion - The conversion of one type of vegetative cover to another, i.e., the conversion of brush or Forest covered lands to grass.

Unique Species - A plant or animal species not classified as endangered or rare, but which have considerable scientific or national interest. Usually, special protection or management measures.

Understory Vegetation - Grass, small trees, shrubs, and other plants found beneath the overstory; overstory being the trees making up the forest canopy.

Unit Plan - A plan for managing a specific part of the Forest. Plans will have sufficient detail to begin project planning.

Variety Class - A particular level of visual variety or diversity of landscape character.

Visitor Days - This is the use of National Forest Land which aggregates 12 person hours; e.g., one person for 12 hours, three people for four hours or 12 people for one hour.

Visual Quality Objective A desired level of excellence based on physical and sociological characteristics of an area. Refers to degree of acceptable alternation of the characteristic landscape.

Wilderness Recommendation Area - Roadless area selected by the Forest Service for its apparent high potential for future wilderness classification. Each wilderness recommendation area will be the subject of future detailed study to determine its availability and suitability for wilderness or other uses.

Wild River Area - Those rivers or sections of rivers that are free of impoundments and generally inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted.

Winter Range Habitat - That portion of the total habitat where animals can survive the winter. It is generally the limiting factor in population density.

Yards of Aggretate - A unit of measure; one cubic yard in size, of sand, gravel or rock.

Xeric - Pertaining to dry sites.

APPENDIX P

A list of contributor's to the Environmental Statement follows:

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APPENDIX Q

National Forest Visual Management System

The Visual Resource Management System involves an inventory of scenic and sociologic values through which visual goals are established.

Inventory	Goals
Variety Class Physical features of the land.	Visual Quality Objectives Degrees of acceptable alteration of the natural landscape.
Sensitivity Level People's concern for scenic quality.	

In the inventory phase, the landscape is evaluated and placed into three variety classes. The classification is based on the premise that all landscapes have scenic value but those with the most diversity have the greatest potential for high scenic value. The three classes are:

Class A - Distinctive:	Usually exhibits rugged landforms. Rock, water, and vegetation stand out as being unusual.
Class B - Common:	Features are obvious but do not stand out.
Class C - Mineral:	Features have very little variety or interest.

The sociologic inventory measures the people's concern for scenery (Sensitivity Levels). Two steps are involved in establishing sensitivity levels. First, areas are identified as being either primary or secondary in importance. Second, the concern of the user is identified.

Level 1 - Highest Sensitivity:	Includes seen areas from primary areas where at least one-fourth of the users have major concern for scenic qualities.
Level 2 - Average Sensitivity:	Includes seen areas from primary areas, where fewer than one-fourth of users have major concern for scenic quality. Also includes seen areas from secondary areas, where at least one-fourth, and not more than three-fourths, of the users have a major concern for scenic quality.
Level 3 - Lowest Sensitivity:	Includes seen areas from secondary areas where less than one-fourth of the users have a major concern for scenic qualities.

The seen areas are also mapped and categorized into foreground, middleground, and background.

The maps from these two inventories are combined to determine visual quality objectives by using the following matrix.

	Visual Quality Objectives*						
Distance Zone and Sensitivity Level	Fg1	Mg1	Bg1	Fg2	Mg2	Bg2	3
Class A	R	R	R	PR	PR	PR	PR
Class B	R	PR	PR	PR	M	M	M MM
Class C	PR	PR	M	M	M	MM	MM

*R - Retention
PR - Partial Retention
M - Modification
MM - Maximum Modification

P - Preservation: Not indicated on matrix; however, is applied to special classified areas, or areas awaiting special classification.

The visual quality objectives establish degrees of alteration of the natural landscape based on aesthetics. The acceptable level of alteration from least to most is:

Preservation: Provides for ecological change only.

Retention: Generally means that man's activities are not evident to the casual forest visitor.

Partial Retention: Man's activities may be evident but must remain subordinate to the characteristic landscape.

Modification: Man's activity may dominate the characteristic landscape, but must utilize naturally established form, line, color, and texture. It should appear as a natural occurrence when viewed in foreground or middleground.

Maximum Modification: Man's activities may dominate the characteristic landscape but should appear natural when viewed in the background.

A full explanation of the visual resource system can be found in Natural Forest Landscape Management, Volume 2, Agriculture Handbook Number 462.

APPENDIX R

Estimated Numbers and Values of Fisheries by Watershed

Table X - R-1. Catch, effort, and net value of sport fisheries for anadromous salmonids produced in watersheds which intersect the Chetco-Grayback Planning Unit, 1975.

watersheds, fishery parameters	chinook	coho	steelhead	cutthroat	total
Chetco					
catch	34,380	6,880	2,500	750	44,510
angler-days	53,090	10,660	6,000	830	70,580
net value	$4,623,900	$925,800	$278,200	$38,300	$5,866,200
Illinois					
catch	27,500	1,930	3,600	450	33,480
angler-days	34,010	2,380	8,640	500	45,530
net value	$3,470,000	$243,000	$400,600	$23,200	$4,136,800
Pistol					
catch	2,750	280	180	600	3,810
angler-days	3,710	370	430	660	5,170
net value	$355,600	$35,300	$20,800	$30,600	$441,500
Smith					
catch	20,630	6,880	6,600	750	34,860
angler-days	32,130	10,730	15,840	830	59,530
net value	$2,781,700	$927,800	$734,400	$38,300	$4,482,200
Winchuck					
catch	2,750	280	350	230	3,610
angler-days	4,180	420	840	540	5,980
net value	$368,100	$36,900	$38,900	$11,900	$473,300

Table X - R-2. Estimated numbers and value of salmon produced in watersheds which intersect the Chetco-Grayback Planning Unit which were taken by commercial fisheries in 1974.

watershed, fishery parameters	Stocks		
	chinook	coho	total
Chetco			
catch	90,630	18,130	108,760
weight	942,500	117,850	1,060,450
value	$989,600	$89,560	$1,079,160
Illinois			
catch	72,500	5,080	77,580
weight	754,000	32,990	786,990
value	$791,700	$25,070	$816,770
Pistol			
catch	7,250	730	7,980
weight	75,400	4,710	80,110
value	$79,170	$3,580	$82,750
Smith			
catch	54,380	18,130	72,510
weight	565,560	117,850	$683,310
value	$593,830	$89,560	$683,390
Winchuck			
catch	7,250	730	7,980
weight	75,400	4,710	80,110
value	$79,170	$3,580	$82,750

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